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THE DEFENSE DEPARTMENT'S COSTLY FAILURE TO PROPERLY MANAGE ITS INVENTORIES CONTINUES

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THE DEFENSE DEPARTMENT'S COSTLY FAILURE TO PROPERLY MANAGE ITS INVENTORIES CONTINUES

I. SUMMARY

The primary duty of the Department of Defense [DOD] is to rigorously prepare for war so that this country will be able to prevail against our enemies. This creates an enormous logistical challenge. DOD's supply system, which is a combination of the individual supply systems of the Defense Logistics Agency [DLA] and each of the Military Services, must manage the herculean task of receiving, storing, and issuing millions of items each year. The Committee finds that a series of persistent supply management problems are potentially costing the taxpayers billions of dollars in fraud, waste, and other abuses.

This report focuses on DOD's secondary item inventory. "Secondary" items include repair parts, supplies, and clothing, while "principal" items include tanks, ships, and airplanes. There has been enormous growth in the volume and value of secondary items in DOD's supply system, which stores and distributes these items to customers at military bases and aboard ships. The reported supply inventory grew from $43 billion in 1980 to approximately $94 billion in 1987, more than doubling during that time. There are approximately 4.6 million different types of items in this inventory.[1]

The enormous, unprecedented, and unsustainable growth in DOD's secondary inventory has simply overwhelmed DOD's depots, warehouses, and accounting and control systems. Although DOD has spent billions of dollars on tanks, planes, and ships, as well as the secondary items necessary to sustain these weapons, its supply system has been unable to cope with the new demands made on it. The management of current inventories has not kept pace with DOD's ability to spend money on new goods.

Although significant inventory growth should enable the DOD supply system to provide the Services with what they need, this growth has not been accomplished economically and efficiently. DOD has experienced important and persistent problems in managing this huge inventory. In fact, the General Accounting Office [GAO] and DOD audit agencies have issued over 300 critical reports between 1981 and 1985 on DOD's management of its inventory.[2]

Despite reports urging corrective action and corresponding DOD promises to correct its deficiencies, actual progress has not kept pace with the growth of the inventory. Fundamentally, these problems can only be solved through thorough attention to these man-

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[1] DOD Supply System Inventory Reports, fiscal years 1980 through 1987. (1987 report included in appendix.)

[2] Inventory Management: Problems in Accountability and Security of DOD Supply Inventories, NSIAD-86-106BR, May 23, 1986.

agement issues. First, DOD should reduce both the volume and value of its total secondary item inventory. Second, it should improve the physical security of its inventory. Third, it should monitor the accuracy of records more carefully to check the amount, location, and dollar value of its inventory. Fourth, it must improve the method by which discrepancies are researched and corrected when the inventory records and the number of items stocked vary. Until these steps are taken, the supply system is open to fraud, waste, and abuse.

This report contains specific recommendations for corrective actions to be taken by DOD to alleviate the problems of inventory control.

II. Introduction to DOD Inventory Management

DOD issues more than $100 billion of material to its customers annually. Logistical support is provided to worldwide DOD activities 7 days a week, 365 days a year. No private sector organization is comparable to DOD with respect to its scope of activity, volume of business and geographic dispersal. In fact, the value of DOD supply inventories, excluding the inventories of operating forces, is estimated to be almost 10 times higher than those of the top five Fortune 500 corporations combined.[3]

The Army, Navy, and Air Force each have wholesale and retail activities within their supply system. DLA has a wholesale supply system that provides items mainly to the Military Services' retail activities. Wholesale storage activities, in coordination with national inventory control points, are responsible for maintaining sufficient stocks of supplies to fill retail level activity requisitions. All supplies within this system are categorized as controlled or noncontrolled. Controlled items are further identified as either classified, sensitive, or pilferable. Classified items are those requiring the highest degree of protection, such as radar circuit cards, and technical manuals on the capability of sophisticated weapon systems. Sensitive items are those requiring a high degree of protection, such as gold and precious metals, small arms and explosives. Pilferable items have a high resale value or desirability for personal use and include tools, uniforms, watches, sunglasses and other items. Each category of controlled items requires varying degrees of enhanced physical security and accountability. Noncontrolled items require minimum physical security to protect them from unauthorized access or theft while in storage.

National inventory control activities maintain the official inventory record, called the accountable record. Storage depots keep custodial records. Both of these type of activities monitor supply item transactions and maintain an accounting of current physical assets in storage. Periodically, the accountable and custodial records are evaluated to determine if they accurately and consistently reflect the availability of items in the wholesale system. Billions of individual supply transactions occur annually. Obviously, each transaction affects the status and accuracy of inventory records, as well as

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[3] Senate Armed Services Committee Task Force on Inventory Management Report, June 10, 1987.

the physical location of supply items. Due to the enormous volume of routine adjustments to inventory records, numerous opportunities for error occur. Each error creates an imbalance between the records and actual physical assets. As imbalances are identified, record adjustments, or "inventory adjustments", are made so that accountable and custodial records will agree with the actual quantity of assets in storage.

DOD has had long-term problems managing its inventory, which has led to congressional concern and some laudable DOD action.

First, in 1981, the Congress investigated large increases in the value of inventory adjustments at naval supply centers which had jumped from $67 million in fiscal year 1978 to $504 million in fiscal year 1981. The investigation and subsequent hearings in February, 1982 established that the large increases were symptomatic of serious inventory management deficiencies, such as lack of management concern and accountability, as well as ineffective physical inventory controls.[4]

Second, in April 1983, the Congress held additional hearings on the military supply systems inventory control problems.[5] At that time, GAO reported that the Navy had 73 initiatives, either completed or ongoing, designed to improve physical inventory controls and records' accuracy. However, GAO also noted that the magnitude and impact of the inventory accuracy problems in the Army, Air Force, and DLA were much greater than DOD had previously recognized.[6] DOD, at that time, was developing a physical inventory improvement plans to identify improvements needed in policies, procedures, and standards for upgrading inventory record accuracy through fiscal year 1985.

Third, from August 1983 through September 1984, the DOD Inspector General and the Services' audit groups performed a defense-wide audit to identify the supply system problems noted by the Congress. In August 1985, the DOD Inspector General reported that DOD and its components were responding to the congressional criticism. The DOD noted, however, that some procedures needed to be refined or revised and that other policies were still seriously deficient. For example, the methods used to select items to be inventoried did not meet DOD policy. In addition, causative research was not identifying and correcting causes of inventory discrepancies.[7]

Fourth, in January 1986, DOD revised its 1982 5-year improvement plan to address specific inventory management problems. After GAO issued a May 1986 report on inventory management [8],

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[4] House Armed Services Committee, Subcommittee on Readiness (a) Staff Report on Investigation of Losses at Naval Supply Centers, Feb. 10, 1982, and (b) Hearing on Inventory Management Control Policies and Practices: Resource Accountability and Losses at the Norfolk Supply Center, Feb. 19, 1982.

[5] House Armed Services Committee, Subcommittee on Readiness, Progress Made by the Navy in Improving Physical Inventory Controls and the Magnitude, Causes, and Impact of Physical Inventory Adjustments in the Army, Air Force, and Defense Logistics Agency, Apr. 27, 1983.

[6] Navy's Progress in Improving Physical Inventory Controls and the Magnitude, Causes, and Impact of Inventory Record Inaccuracies in the Army, Air Force, and DLA, GAO/NSIAD-84-9, Nov. 4, 1983.

[7] Defense-wide audit of Physical Inventory Adjustments, Office of the Inspector General, Department of Defense, Aug. 16, 1985.

[8] Inventory Management: Problems in Accountability and Security of DOD Supply Inventories, NSIAD-86-106BR, May 23, 1986.

DOD finally admitted that inventory controls were a DOD concern in its annual Federal Managers Financial Integrity Act report to the President and the Congress.[9]

The Committee believes that continued improvement in DOD's inventory management requires high-level DOD management to emphasize and explore new ways to address the long-standing problems.

III. Specific Problems in DOD Inventory Management

The discussion which follows concerns (A) the need to control unnecessary inventory growth; (B) the inadequate physical protection of DOD assets; (C) the inaccuracy of inventory records; and (D) the ineffectiveness of research to identify the causes of inventory discrepancies.

A. FAILURE TO CONTROL INVENTORY GROWTH

The Committee is deeply concerned about the recent growth of secondary item inventory. DOD's secondary item inventory has grown from $43 billion in 1980 to $94 billion in 1987.[10] This $51 billion increase includes $19 billion growth of "long supply," $27 billion growth of the Approved Force Acquisition Objective (AFAO) inventory, and $5 billion growth of unstratified inventory.

The Committee is especially concerned about the growth of the long supply portion of the inventory. According to the informal DOD definition, long supply is stock that has "no known present peacetime or wartime requirement." Long supply is of particular concern because it has grown from about $10 billion in 1980 to about $29 billion in 1987. Both GAO and DOD experts agree that this increase in long supply is "bad" growth. When these long supply stocks were purchased, they were presumably purchased to meet a specific need, since DOD does not have authority to intentionally order stock for long supply. Some of this long supply stock will be used in the future. Some long supply stock will be held for contingency use, even if there is no predictable demand or quantifiable future need for the goods and no current plans to use them in time of war. Finally, a large part of long supply is "potentially excess", a DOD term that means it is being held awaiting a disposal determination. The Committee's investigation suggests that mismanagement has been a significant part of this growth. Examples to back this assertion are presented in the sequel.

AFAO inventory represents current operating stock and war reserves. War reserves are stocks stored during peacetime to satisfy increased wartime consumption. They are intended to sustain operations until resupply takes place.

Unstratified stock, according to a DOD official, represent items in transit. When received, this stock is classified as AFAO or long supply.[11]

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[9] Department of Defense Annual Statement of Assurance for fiscal year 1986, Dec. 30, 1986.

[10] GAO report, Defense Inventory: Growth in Secondary Items, GAO/NSIAD-88-189BR, July 1988. (Included in appendix.)

[11] DOD Supply System Inventory Reports, fiscal years 1980 through 1987. (1987 report included in appendix.)

The figures presented above and in the charts in this section of the report were extracted from a DOD Supply System Inventory Report. The information in DOD's report is accumulated from data provided by the Defense Logistics Agency and each of the Military Services.

DOD expects this information to be accurate. However, when the Committee queried the Air Force about the reasons for the large increase in the Air Force long supply of aircraft parts from 1985 ($6.9 billion) to 1986 ($11.7 billion), the Committee was told these figures were incorrect by billions of dollars.[12] The Air Force investigated the matter and reported to the Committee that the correct figure was $4.3 billion for 1985 and was $6.2 billion for 1986.[13]

The Air Force believes that an overstatement by the San Antonio Air Logistics Center caused at least one major error in the data it provided to DOD. This overstatement of $3.3 billion occurred because the Center erroneously reported 1,000,045 starters for the H-1 and H-3 helicopters were on hand. In fact, the correct figure was 45. The unit price of the item was $3,280.

The Committee asked Air Force officials how such a large error could go undetected until the Committee's investigation brought it to their attention. The Air Force responded that it does not actually monitor this type of data and pays little attention to it.

The Committee has prepared a series of charts [see appendix] to illustrate the growth of secondary item inventory.[14]

Chart 1 displays the value of secondary item growth from $43.4 billion in 1980 to $94.0 billion in 1987. Thus, it more than doubled with a 117 percent growth rate during the period. The increase totalled $50.6 billion, making the increase greater than the total value of the 1980 inventory.

Chart 2 shows the amount of DOD's long supply inventory. The value of items in long supply grew from $10.2 billion in 1980 to $29.2 billion in 1987. This growth of $19.0 billion represents an increase of 186 percent.

Chart 3 compares the dollar growth of long supply inventory and AFAO inventory. A comparison of the actual dollar value of AFAO with that of long supply shows long supply increasing from one-third of the value of AFAO in 1980 to about one-half in 1987.

Chart 4 illustrates the demand for secondary items from 1980 to 1986. It shows that as the secondary inventory grew by over $46 billion, the number of demands (or requests) for secondary items remainded relatively constant. From 1980 to 1984 the number of demands increased about 11 percent (from 29 million to nearly 32 million). By 1986, the number of demands had fallen to the demand level in 1980.

Chart 5 displays the supply availability of secondary items from 1980 to 1986. Supply availability means the item is available in the inventory when it is needed. From 1980 to early 1987, supply avail-

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[12] Letter from the Chairman, Senate Committee on Governmental Affairs to the Secretary of the Air Force, Nov. 2, 1987. (Included in appendix.)

[13] Letters from the Air Force Deputy Assistant Director (Logistics) to the Chairman, Senate Committee on Governmental Affairs, dated December 15, 1987; and December 28, 1987. (Included in appendix.)

[14] DOD Inventory Charts. Substantial assistance in preparation of these charts was provided by Senator Chiles staff of the Senate Budget Committee based on data provided by DOD.

ability remained relatively constant. By 1987, satisfied demands decreased a few points to 84.8 percent. Charts 4 and 5 demonstrate that demand and availability have remained relatively static, despite significant increased investment.

Causes for Inventory Growth

The growing demand for aircraft components and parts is the single largest cause of secondary item inventory growth. From 1980 to 1987, demand for aircraft components and parts escalated by $30.6 billion, a 117 percent increase. Overall, DOD officials state that secondary item inventory has increased in value since 1980 for several reasons: (1) inflation; (2) the effort to increase the level of war reserves; (3) rising prices; (4) greater lead times to procure items; (5) force modernization; (6) elimination of older equipment; and (7) a moratorium on disposal of excess items.[15]

While these general explanations have some merit they are not the entire explantion. This Committee and the Senate Budget Committee have directed the GAO to examine in detail the reasons for this growth to determine ways to curtail it without detrimental effects on readiness or sustainability. Whatever the reasons for ineffeciencies in the general increase in the growth of secondary item inventory the "long supply" problem is less susceptible of such explanations.

Deputy Secretary of Defense Taft had these comments on long supply when he testified before the Committee on October 27, 1987:

> I would say that if we are looking for areas in which to reduce our inventories and to save money, this is the place to look.

Deputy Secretary Taft also claimed that not all long supply growth is bad growth and provided several positive reasons for this growth.[16]

First, any unanticipated reduction in the Military Services' operations can cause long supply problems. For example, if flying hours drop significantly, less aircraft spares and consumables will be necessary. If the diminished demand is significant enough, spares already purchased and those on order may become part of long supply.

Second, improvements in the quality of spare parts can reduce the number of failures and necessary replacements. If requirements are not adjusted and parts are purchased in the usual numbers, better quality parts might become part of long supply.

Third, when the Services phase out older weapon systems, long supply may grow as the Services elect to maintain spares for those systems. Sometimes, despite the best managerial efforts to maintain an inventory of supplies that will support the operability of a weapon or support system, the Services may build up inventories that will ultimately remain unused.

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[15] GAO report, Defense Inventory: Growth in Secondary Items, GAO/NSIAD-88-189BR, July 1988. (Included in appendix.)

[16] Hearing Report on DOD Inventory Control by Senate Committee on Governmental Affairs, Oct. 27, 1987 (S. Hrg. 100-526).

Finally, one important version of the need to support existing weapon systems is the "life-of-type" purchase. Some manufacturers who provided original parts and spares may indicate they intend to cease production. Under these circumstances, DOD may choose to buy more supplies than AFAO actually requires especially if it anticipates a steady demand. However, such a step can lead to growth in long supply, much of which is never used.

For every legitimate reason asserted to justify the growth in long supply, there are an equal number of practices causing long supply growth that represent management deficiencies that must be corrected. First, the provision of far more money for supplies than the Services could efficiently spend has generated a significant increase in long supply. Numerous uniformed officers and civilian employees told the Committee that more money was available than could be intelligently spent. Rather than reducing supply purchases to maximize AFAO needs, the Services overpurchased. These overpurchases illustrate the Services' desire and need to expend all their obligated funds before the end of the fiscal year. In this way, the Services ineffectively spend the taxpayers' money to ensure themselves a continued flow of new funds.

Second, overstated supply needs for new weapon systems have contributed significantly to long supply. Often, manufacturers overestimate the number of spare parts needed in the initial provisioning of a new defense system. Such excess procurement may occur quite innocently through inadequate operating experience or conservative supply estimates. However, it may also result from the profit motive. Any contractor who provides an overestimate of the supplies may be ensuring an excessive, unnecessary number of goods, which he himself supplies or else profits from procuring it for the Services.

Third, the supply system may inadvertantly encourage supply officers to overstate the needs of their customers to ensure they have the necessary supplies on hand and thus unnecessarily expand the retail and wholesale DOD inventories. Promotions are based on the successful provision of needed supplies to line operations, but the overall efficiency of the system is substantially reduced by over-ordering.

During its review, the Committee discovered several examples of purchases that ended up clogging the aisles of DOD warehouses, thereby contributing little or nothing to the readiness of the Services. For instance, DLA is responsible for purchasing and storing metal bars used to mount lights on top of police and emergency vehicles. An increase in demand for this type of bar during three quarterly purchasing periods encouraged DLA to purchase 4,297 bars in February 1986 at $37.73 per unit. About 1,350 of these bars were to cover the inflated estimated annual demand, and the remainder was to cover the demand from the time a resupply request was generated to the time the goods are received from the contractor (a period of 538 days). Unfortunately, since the time of the procurement, demand for this type of bar dropped, and now DOD has enough of the bars to last 6 years. Boxes of these bars are currently crowding the aisles of a DLA warehouse.

This situation illustrates the potential problems arising with fluctuating demand data, long procurement lead time, overpurchas-

ing, unnecessarily overcrowded warehouses, and needless procurements. It also demonstrates inventory accuracy problems. For example, procurement lead time was excessive. Because the acquisition period was inflated, any fluctuations produce disproportionate purchases. The light bar example also demonstrates that long supply problems severely strain other supply operation functions by overcrowding storage facilities. In fact, DOD's warehouses are so overcrowded that they are considered filled beyond normal capacity. Forklifts are incapable of maneuvering in some of the warehouse aisles. Damage to the goods is only one potential result of such problems.

The following examples further demonstrate the ways in which inventory ends up in long supply.

Excessive Orders

By March 31, 1986, the Air Force had $600 million in "on-order" spare parts which, when received, would be placed in long supply. When the Air Force ordered these spare parts, it apparently had a legitimate need for them. However, before the Air Force received the parts, its needs changed, and the parts became part of long supply.[17] GAO has been critical of the Air Force for failing to terminate excess on-order contracts when it is economical to do so.[18]

In 1987, the Navy needed 9 gear rack pistons, but for unknown reasons placed a purchase request for 18 pistons. By December 1987, requirements for the pistons had decreased to 5. Although the item manager did attempt to terminate the purchase of 13 pistons in December 1987, the contracting division issued a request for proposal for 18 pistons in February 1988. Apparently, the contracting division was unaware of the item manager's cancellation request. If received, the 13 items, representing a 30-year supply, would increase the amount of unneeded inventory by $77,000.

Minimum Buy Requirements

Sometimes contractors will require DOD to purchase a minimum quantity of their products.[19] DLA's records indicate that by August 1987 it had on hand a 22-year supply of bubonic plague vaccine valued at $4.4 million. Apparently, the sole-source vendor had established a minimum annual production quantity of 66,000 units valued at about $780,000, although only 16,895 units are used annually. This vendor's self-imposed requirement necessarily implies that the DLA will continue to overprocure this vaccine. Although about 75 percent of the annual vaccine procurement is eventually thrown away due to its 18-month shelf life, the DLA continued to purchase it to maintain an active production base.

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[17] Statement of Comptroller General, GAO, before the Senate Governmental Affairs Committee on DOD Inventory Management Problems Continue, Oct. 27, 1987 (S. Hrg. 100-526).

[18] GAO report, Military Procurement, Air Force Should Terminate More Contracts for On-Order Excess Spare Parts, GAO/NSIAD-87-141, Aug. 12, 1987.

[19] Statement of Martin Ferber, Senior Associate Director, GAO, on DOD Inventory Growth and Management before the Subcommittee on Readiness, House Armed Service Committee, Mar. 15, 1988.

Customer Returns

Between fiscal years 1981 and 1987, DLA's inventory increased by $2.6 billion due to customer material returned to DLA depots. These returns, approximately 29 percent of DLA's $9 billion inventory, have substantially increased the depots' workload including the receipt, identification, and storage of material. In fiscal year 1987, the depots processed almost 1.2 million shipping and receiving documents for customer returns of items valued at $440 million. According to DLA, these returns were more than 50 percent of the depots' receipts.[20]

B. PHYSICAL SECURITY OVER INVENTORIES

Strong physical security is a prerequisite of efficient inventory management. When inventory accountability becomes a problem, strong physical security is essential to prevent theft. For example, the Air Force Inspector General investigated the vulnerability of the the Air Force supply system and in 1986 reported that Air Force physical security practices of both wholesale and retail maintenance and supply activities provided numerous opportunities for theft.[21] In 1986, GAO personnel entered Army and Air Force supply warehouses in Europe undetected and could have easily removed supplies, such as spare parts for F-15 and F-16 aircraft.

In addition, the Inspector General in his 1986 report stated that weaknesses in inventory procedures and adjustment practices could have generated inaccurate records of wholesale and retail activities and, thus, encourage theft or diversion of property.

Although GAO's investigation focused on inventory accuracy rather than physical security, GAO personnel did observe numerous security deficiencies in the Services' supply warehouses.[22] For example:

GAO discovered numerous instances of inadequate physical security, including inadequate and improper storage facilities, inoperative detection devices, ill-equipped and poorly trained guards, and ineffective accountability for sensitive items. This insufficient security covered warehouses full of repair parts, as well as sensitive missiles that could be potential targets for terrorist theft.

GAO also reviewed Naval security from base perimeters to storage and maintenance facilities. GAO found problems in almost every area including (1) lack of protection of restricted areas, (2) failure to control commercial vehicles, (3) lack of waterfront security, (4) failure to comply with fencing requirements, and (5) inability to control private boats and airplanes on Navy bases.

At DLA, GAO observed inadequate storage and protection of potentially pilferable items. It noted that other security problems had been identified in security reviews but were not followed by adequate management attention.

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[20] Statement of Martin Ferber, Senior Associate Director, GAO, on DOD Inventory Growth and Management before the Subcommittee on Readiness, House Armed Services Committee, Mar. 15, 1988.

[21] Special Inspection of Supply System Vulnerability, Office of Air Force Inspector General, Feb. 28, 1986.

[22] Statement of Comptroller General, GAO, before the Senate Governmental Affairs Committee on DOD Inventory Management Problems Continue, Oct. 27, 1987 (S. Hrg. 100-526).

The following, more specific examples, also depict poor Army physical security at various locations in Germany.

Stinger missiles were stored in lightweight corrugated metal sheds with the word "Stinger" stenciled on the side.

Dragon and TOW missiles were stored in tractor trailers and on open concrete storage pads in plain view of persons outside the storage area.

At one location, the guard force responsible for patrolling the supply area was inside the guard shack rather than outside guarding the area. Another guard was absent from the guard post and had affixed a note stating "Be back in 5 minutes" to the door.

Highly pilferable parts, such as tires, batteries, and electronic parts (valued at $175,000), were stored in tents with holes in their side walls, thereby offering easy access to the supplies.

The Committee has not focused on the actual thefts and frauds which lack of security and accurate inventory records permit and encourage.

C. ACCURACY OF INVENTORY RECORDS

DOD inventory records are constantly changing due to the large volume of its transactions and significant fluctuations in inventory demand. Clearly, DOD must know, as accurately as possible, the amount of inventory it has on hand. Without precise information, DOD may experience several negative consequences. First, if DOD has more of an item than its records actually show, new stock will be ordered prematurely. Second, if DOD has less of an item than its records indicate, it may run out of stock before replacements can be obtained. Third, inaccurate or misleading records may subject supply inventories to waste or fraud without detection. DOD needs an effective method to identify promptly inventory accuracy problems, and for measuring their severity, and causes.

In fact, GAO found that the inventory inaccuracy is greater than DOD's report indicate.[23] For example, inventory managers deliberately changed inventory data to bring their accuracy rate to an acceptable level. These practices occurred especially when numerical standards of performance were rigidly enforced.

One DOD accuracy indicator is the "gross monetary adjustment rate," which shows the relationship of the value of annual gross inventory adjustments (gains and losses) to both the average inventory value of the total inventory and the value of material actually inventoried. In fiscal year 1986, DOD's overall monetary accuracy was reported as 97.4 percent based on total average inventory value and 94.8 percent based on the value of items inventoried. The reported accuracy rate has declined from 96.7 percent in fiscal year 1984 to 94.8 percent in fiscal year 1986 (rate based on value of items inventoried).

Use of the gross monetary adjustment rate as a primary indicator of inventory accuracy is misleading for at least four reasons. First, the gross monetary adjustment rate does not indicate certain inventory adjustments. When prior adjustments will explain var-

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[23] Statement of Comptroller General, GAO, before the Senate Governmental Affairs Committee on DOD Inventory Management Problems Continue, Oct. 27, 1987 (S. Hrg. 100-526).

iances between actual supplies and the records, the Services and DLA will make "reverse" adjustments to their records. These reversals are reported to DOD, yet excluded from the computation of the gross monetary adjustment rate. If they were included, the gross monetary adjustment rate for fiscal year 1986 would have been 86.9 percent rather than 94.8. Clearly, all adjustments should be used to compute the gross monetary adjustment rate.

Second, DOD only requires reports of major adjustments (those with a dollar value over $800). These reported changes are used to compute inventory accuracy rates. Although DOD should concentrate primarily on the more valuable items, it should also monitor inventory adjustments of the less valuable, since some less valuable items are critical to weapon system operations.

Third, to appear efficient inventory personnel may not report certain inventory adjustments. After concluding that a current inventory adjustment is not a problem, they make the adjustment "disappear" by changing the inventory transaction history in past inventory records. This practice contradicts DOD policy and good management procedures. For example, GAO reviewed 15 inventory adjustments, each valued at over $20,000, processed in October 1986 at the Army Tank Automotive Command. Eight of these adjustments showed an improper change of old transactions. In one instance, the October 1986 physical inventory at the Army's New Cumberland depot revealed a shortage of 11 truck axle assemblies, each costing $11,066. Rather than recording this shortage as an inventory loss of $121,726, the Command ostensibly resolved the loss by partially reversing a June 1980 gain of 25 axles. On its face this change shows that the 1980 gain transaction and following inventories were erroneous. Obviously, future assumptions like this would be incorrect.

Fourth, the number of unscheduled inventories, designed to investigate suspected or known problems, has increased, while the number of scheduled inventories, routinely performed as an internal control, has dropped. Since the results of both type of inventories are included in computing the inventory accuracy rate, that rate is distorted. Presumably inventory rates from scheduled inventories would show a better accuracy rate than those from unscheduled inventories.

DOD must also report the accuracy of inventory records. The accuracy of inventory records is based on the number of times the actual inventory record and physical count agree. In fact, the Services and DLA are reported to be in the 80 to 95 percent range. Although record accuracy rates are an important measure of inventory accuracy, they alone do not demonstrate the extent to which records are inaccurate. For example, when an inventory record showing 100 units in stock is inaccurate because the actual stock on hand is less than 100 units, it is important to know to what extent the number of on hand stock differs. This type of information on quantity accuracy has to be measured. Yet, currently DOD does not measure quantity accuracy.

To obtain an independent assessment of DOD inventory accuracy, GAO physically inventoried a statistical sample of items at a major depot or supply center each in the Army, Navy, and DLA. GAO did not conduct such an inventory in an Air Force depot, be-

cause the Air Force was already performing an annual sample inventory at each of its Air Logistics Center. GAO does have some reservations, however, on the Air Force procedure and subsequent results of its internal inventory studies.

From its samples, GAO calculated three measures of inventory accuracy: (1) records accuracy—how often the inventory records and physical counts agree; (2) quantity accuracy—the quantity of units counted as a percent of the quantity shown on the record; and (3) dollar value accuracy—the dollar values counted as a percent of the dollar values shown on the records. The following chart shows the results of these GAO inventories.[24]

GAO INDICATORS OF INVENTORY ACCURACY

Activity	Percent accurate				
	Records overall	Units		Dollar value	
		From	To	From	To
Army Tank and Automotive Command	44	64	99	60	99
Navy Supply Center, Norfolk	69	80	100	72	100
Air Force Logistics Command	68	37	93	76	93
Defense Logistics Agency	63	85	99	82	98

Note.—The ranges shown for quantity and dollar percentages for the Army and Navy were determined by grouping items by dollar value, determining their average accuracy by groups, and arraying them from lowest to highest accuracy. Ranges for DLA were computed and arrayed by commodity types, such as medical or construction items. Ranges for the Air Force were based on statistics the Air Force computed for each Air Logistics Center.

Because GAO's samples were stratified by value of items, or in DLA's case by types of commodities, specific problems surfaced that would not be visible in DOD's inventory accuracy reports. For instance, the record accuracy rates for controlled items kept in DLA vault and caged areas were approximately the same as the 63 percent record accuracy rate for all items in the DLA sample. This is especially disappointing due to the special and costly efforts to protect such controlled items. Moreover, in the Army sample, inventory accuracy was lower for high dollar value items, those with over a $50,000 unit price.

To demonstrate other types of inventory accountability problems, two additional examples follow. The first instance shows the Army's inability to locate Stinger missiles by serial numbers. The second example illustrates the Navy's inability to account for the number of its repairable items after they have been sent to contractor or other Military Service facilities for repair.

Poor missile accountability

During the Committee's review, the Army's inability to account for several Stinger missiles was revealed. Although the Committee's review focused primarily upon secondary items, rather than munitions, it also included physical security and accounting measures for man-portable weapons, including the Stinger anti-aircraft missile, which must be tight.

In September 1986, the Army Missile Command asked the 200th Theater Army Material Management Center in Europe to return

[24] Statement of Comptroller General, GAO, before the Senate Governmental Affairs Committee on DOD Inventory Management Problems Continue, Oct. 27, 1987 (S. Hrg. 100-526).

24 specific Stinger missiles for test firing.[25] Since only some Army units controlled their missiles by serial number, the Center had difficulty locating specific missiles. By March 1987, only 9 of the 24 missiles were located. After conducting a total inventory of the missiles in the European Theater at the Committee's request, the Army advised the Committee that the proper quantities of missiles were on hand.

The Army later admitted that its difficulty in locating specific missiles by serial number occurred because it stocks the missiles by production lot number rather than by serial number. In addition, the Army conceded that its policy for recording inventory information on small missiles was ambiguous and contained multiple and contradictory control requirements.

Essentially, there were two Army regulations in effect. One required the Army to record the number of small missiles by production lot number. The other regulation required the Army inventory to be listed by serial number. Apparently, most Army inventory personnel followed the regulation requiring lot number records. This method of control is significantly inferior to serial number recording, since many missiles share the same production lot number, whereas serial numbers are unique to individual missiles. Had the Missile Command been able to refer strictly to serial number records, it would have been able to locate its missiles with ease. Moreover, if a terrorist managed to obtain an Army missile, serial number records would provide a better trace to the point where the missile was stolen.

After this Committee's inquiry, the Army decided on September 2, 1987, to clarify its regulations, thereby requiring that small missiles be accounted for by serial number.[26] The Committee considers this action as a significant improvement in accounting for and controlling these dangerous weapons. However, it must be admitted that some number of these weapons are known to have been delivered to allied or friendly hands and then passed on one way or another to unfriendly hands. Better inventory management by the U.S. must be matched by a more careful policy of arms transfers.

Poor Accountability Over Repairable Items: Who Keeps the Records?

The Navy has a serious problem affirming and controlling items sent for repair to commercial contractors' plants and other Military Services' repair centers. Quite simply, the Navy's inventory system cannot adequately track these items. In fact, the Ships Parts Control Center admitted in letters dated June 4, 1985, to contractors and other military repair centers that it had no accountability or control of the Center's repairable items in these non-Navy facilities.[27] The following quote is from the Center's letter to a contractor:

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[25] Letters from Chairman Glenn to the Army, July 10, 1987 and September 9, 1987. Letters from Deputy Secretary of the Army Orsini to Chairman, Senate Governmental Affairs Committee, Aug. 13, 1987, Sept. 10, 1987, and Oct. 8, 1987. (Included in appendix.)

[26] Message from Major General Murray to Army Units, Subj: Serial Number Accountability for Ammunition and Explosives, Sept. 2, 1987.

[27] Letter from Ships Parts Control Center to Space Microwave Lab, Inc., June 4, 1985. (Included in appendix.)

> Your volume of repair may or may not be large: but, in either case, we have a problem that our computer files have no visibility of our repairable items in your facility. Due to this lack of information, we have great difficulty in making accurate supply decisions as to when and how much to buy or repair.

In effect, the Center asked its contractors and other Military Services to provide it with the necessary information as to what Navy-owned items were at their facilities for repair. After receiving this information, the Center adjusted its financial records by $620 million and discovered that it had suffered a net loss of $464 million. These adjustments were made with absolutely no assurance that such changes were accurate.

When staff from this Committee queried the Navy on this situation, the Navy replied that material losses were not at issue. Instead, these changes were simply "paper adjustments" to coordinate the Navy's records with the official inventory records maintained by the contractors.[28] Furthermore, the Navy never verified the figures it received from its contractors to determine if they accurately compared to the Navy's own records.[29] In the worst case, one contractor reported that it had over $48 million of repair items less than the Navy's information indicated. Certainly, there was ample opportunity for these contractors to misuse the Navy's material.

The Navy told the Committee that it had instituted corrective measures to correct this problem by 1990.

D. RESEARCH TO IDENTIFY CAUSES FOR INVENTORY INACCURACIES

Causative research serves several purposes. First, it provides managers with indications of control systems' failures, as well as potential areas for improvement. Second, it reduces similar future discrepancies. Third, it ensures that proper adjustments are made to inventory records. Fourth, it evaluates trends or systemic problems so that corrective action can be taken. Unfortunately, causative research is apparently not accomplishing these results. Instead, the Services and DLA seem to pursue this research merely to make inventory accuracy reports look better. Certainly, this does not address the causes of inventory problems. The following examples illustrate this problem.[30]

At the Norfolk Naval Supply Center, causative research often resulted in mere adjustments or reversals. In July 1985, a physical inventory of the Supply Center was short one aircraft radar set valued at over $1.2 million. After the Navy's causative research failed to determine why the radar set was missing, the Navy concluded that it probably had never been received and consequently reversed its receipt for one set delivered 5 years earlier. This type

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[28] Letters from Chairman, Senate Governmental Affairs Committee to Secretary of the Navy, June 17, 1987, and Nov. 9, 1987. (Included in appendix.)

[29] Letters from Admiral Whittaker, Naval Supply Systems Command, Sept. 18, 1987, and from Secretary of the Navy, dated Feb. 2, 1988. (Included in appendix.)

[30] Statement of Comptroller General, GAO, before the Senate Governmental Affairs Committee on DOD Inventory Management Problems Continue, Oct. 27, 1987 (S. Hrg. 100-526).

of adjustment in no way accounts for a defense item valued at over $1 million.

This Center also treated the inventory gains and losses of different items as if they were identical. It offset the losses with the gains and resolves any variances. In its January 1986 physical inventory, the loss of one compressor worth $244,920 was recorded and an adjustment posted to the records. Later, the Supply Center offset this recorded loss with the gain of another compressor worth $104,360 and reversed its earlier adjustment.

In addition to thorough causative research, the Services and DLA should identify and analyze inventory trends. For example, the inventory accuracy data that DLA reported to DOD showed a $23.5 million net gain during fiscal year 1986. However, this net gain included DLA items stored at other Service facilities. Whe DLA items stored in its own depots were examined, DLA discovered that it was experiencing a net loss, particularly of items susceptible to theft or diversion such as medical, clothing, and textile items. The trend of losses detected for these items totalled $30 million during fiscal years 1985 and 1986.

In June 1986, the Air Force began implementing a new causative research policy not yet approved by DOD. DOD requires the Services and DLA to conduct research on a sample of item variances between $800 and $16,000, as well as all variances for controlled items or those over $16,000. Under the Air Force's new policy, it would not adjust or research potential variances less than 10 percent in quantity or less than $5,000 in value, and would conduct causative research on only monetary variances greater than $16,000. The Air Force supposedly adopted this policy to decrease the number of adjustments that it considered unnecessary and reduce the amount of research it would need to conduct. The Committee believes that this policy is a step backwards. Whenever a physical count shows that the number of items on hand differs from the total number recorded, the records should be adjusted. Otherwise, procurement or other managerial decisions might be based on erroneous information.

IV. DOD Initiatives to Improve Inventory Management

In 1982, the Defense Council on Integrity and Management Improvement designated physical inventory control as an issue that required immediate management attention and corrective action. The Council established a plan to improve physical inventory controls. Under this plan, the Joint Physical Inventory Working Group developed a physical inventory control improvement program plan in June 1982, which called for a series of actions from fiscal years 1982–85 to identify and implement improvements to upgrade physical inventory performance and inventory records accuracy. The plan was revised in January 1986 and proposed actions through fiscal year 1990. One of the specific provisions of the plan was to validate existing performance standards and to develop new or revised standards.

The Air Force and the Navy, dissatisfied with current inventory accuracy indicators, have developed methodologies to statistically sample and analyze inventory accuracy. At one of its smaller

supply centers, the Navy implemented a host of improved security measures. Navy management acknowledges that the success of these actions merely demonstrates the Navy's attempt to improve inventory management. Overall, the Navy still has a long way to go to before it makes successful systemic improvements.

Although DOD has continually attempted to improve inventory management, the Committee believes that all present corrective actions must be pursued more vigorously and additional corrective actions must be initiated. At the July 1986 Senate Armed Services Committee Task Force hearings, DOD stated that it was aware of its inventory management problems and ranked solutions to these problems among its highest management initiatives. Later, DOD identified supply system problems as a dominant weakness within DOD in its fiscal year 1986 Federal Managers Financial Integrity Act report.[31]

V. Conclusions

On the basis of the numerous studies that have been performed by GAO, the DOD Inspector General, and the Services' audit agencies in this decade, clearly much remains to be done with respect to these longstanding inventory management problems. DOD's secondary item inventory must be reduced. It must be adequately safeguarded and monitored. Sufficient research must be done to examine inventory problems and find overall solutions.

INVENTORY NEEDS TO BE REDUCED

First and foremost, DOD must act to meaningfully reduce any excess amount of secondary item inventory. This can be done without adversely affecting the readiness and sustainability of the Services. The value of secondary item inventory has more than doubled since 1980 to $94 billion. The number of items has increased from about 3.9 million to 4.6 million. This inventory may be more than DOD needs or can efficiently manage. This excessive growth has caused the following problems:

There has been a significant increase in the amount of secondary-item inventories excess to requirements. At the beginning of fiscal year 1988, these excesses were valued at $29.2 billion, an increase from $10.2 billion in 1981.

DOD has bought large numbers of repair parts to support of newly fielded systems. Many of these parts are not necessary to support the systems in the first few years of their operations.

DOD warehouses are now filled to capacity, resulting in DOD relaxing its policy of not disposing of any item supporting a weapon system still being used.

At the two depot sites the Committee staff visited, it observed overcrowding. In Mechanicsburg, Pennsylvania, warehouses at the DLA depot were built during World War II and are bursting at the seams with supplies. This overcrowding reduces physical security and increases opportunities for pilferage of supplies. It also reduces

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[31] Statement of Comptroller General, GAO, before the Senate Governmental Affairs Committee on DOD Inventory Management Problems Continue, Oct. 27, 1987 (S. Hrg. 100-526).

productivity, increases the risk of injury, and promotes damage to materials which are improperly stored.

In Texarkana, Texas, the Red River Army Depot inventory is currently at 105 percent capacity. Warehouses within a 500 mile radius of the site have been rented to store items exceeding current needs. Other warehouses contain deteriorating equipment which was inadequately maintained.

HIGHER PRIORITY SHOULD BE GIVEN TO INVENTORY MANAGEMENT

Inaccurate inventory records, combined with inadequate causative research, and poor physical security have caused numerous problems. First, too many opportunities currently exist for fraud, waste, and abuse. In fact, evidence shows that some theft is occurring, but DOD has not yet developed a way to measure the extent of this theft. Second, DOD is unable to adequately perform its mission.

Poor inventory records and practices often result in critical supply shortages and prolonged delays in filling requisitions for material necessary for mission readiness. Inaccurate records also promote inflated budget requests for procurement and repair funds. Obviously, if a particular branch of the Services is unsure of the amount of its current stock, it will tend to overpurchase to ensure its customers' needs will be met. Misleading records also encourage the incorrect distribution of stock to the wrong locations or in the wrong quantities. In addition, depots may mistakenly accumulate or dispose of excess stocks as a result of either buying the wrong items or buying too many of the right items.

A leading indicator of success in inventory management is the number of times the supply system has the correct item in stock in sufficient quantities to meet a customer's needs. Stock managers' efficiency is evaluated by their ability to meet stock availability rates and avoiding material shortages. The simplest way to attain a high efficiency rating is to buy everything that a customer might need. Despite large scale increases in the size of DOD's inventory since 1981, overall stock availability has remained constant. Specifically, the DLA stock availability has remained constant, the Air Force and Marines has decreased, and the Army and Navy have improved slightly.

DOD needs to place supply management much higher on its list of priorities. To reinforce DOD's readiness and sustainability, more funds, and especially more management attention, must be focused on the implementation of systems and facilities that will adequately manage DOD's huge inventory.

Clearly, the decline of supply management and the support of major weapon systems are directly proportionate. When DOD has had to choose between buying more and better weapon systems and devoting greater funds to effectively support existing weapon systems, DOD has historically opted for the former. DOD follows this practice knowing the Congress will provide the necessary funding to support additional weapons systems once they are procured. DOD has also followed this philosophy in its acquisition of supplies. When additional funds were available for all phases of DOD's activities in the 1980s, DOD chose to buy more supplies rather than

investing in improved inventory management systems and in better facilities.

VI. Recommendations

The recommendations in this section are made in recognition of the requirements contained in the National Defense Authorization Act for fiscal year 1989, requiring the Secretary of Defense to conduct a comprehensive study to determine the effectiveness of DOD procedures to ensure security and control for supplies at DOD depots. The study is to be completed within 18 months of the act and is to include a plan to modernize the supply facilities and distribution procedures of each of the military departments and defense agencies. The following recommendations should be considered when conducting that study.

In this period of reduced budgets for DOD, the Committee recognizes that the initial cutbacks made in the supply system are any personnel and equipment that are not absolutely essential to receive, store, and issue goods. In this budget cutting atmosphere, it may be pound-wise and penny-foolish to slash accounts devoted to inventory management. Therefore, the Committee recommends that the Secretary of Defense determine and request any additional investment for inventory management, such as personnel, training, accounting systems, management information resources, and facilities. This will ensure that the DOD secondary supply system has the proper degree of accountability and control. The Secretary of Defense should also establish the time frames to make those improvements.

Furthermore, the Committee recommends that the Secretary of Defense:

1. Determine ways to reduce the investment in the supplies themselves to offset the funds which may be required to achieve the aforementioned recommendation. Long supply inventory is the first area that should be examined for possible reductions. The Committee also recommends that the Secretary determine long supply cost reduction goals for each of the Military Services and DLA.
2. Actively pursue the corrective actions set out in the 5-year improvement plan.

The Committee also endorses these recommendations made to the Secretary of Defense from the GAO:

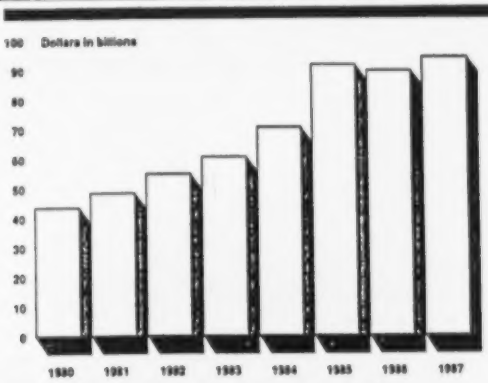
1. Require inventory record adjustments as soon as they are identified through physical inventories or other methods.
2. Develop a comprehensive policy on inventory management and inventory accuracy measurement to address the adequacy of the Inventory Control Effectiveness report for management oversight, and elimination of reversals of prior inventory adjustments.
3. Re-emphasize the necessity of effective causative research to identify inventory variances and analyze them to identify systemic problems. Variances currently under the monetary criteria for causative research should be sampled as further input to identifying systemic problems.

The Committee requests that the Secretary of Defense provide a progress report outlining the status of all of these recommended solutions each February 28 for each of the next 3 fiscal years, starting with February 28, 1989.

APPENDIX

Chart 1

DOD INVENTORIES OF SECONDARY ITEMS - OVERALL GROWTH 117 PERCENT BETWEEN 1980 AND 1987

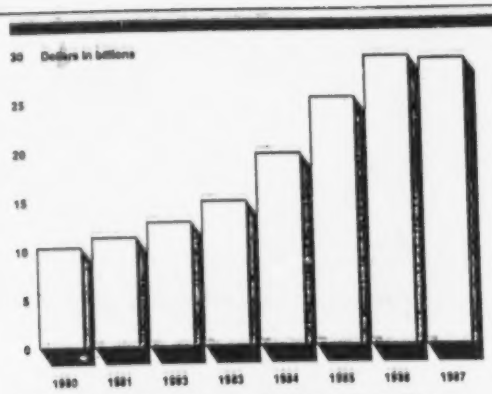


Secondary items include spare parts, repair parts and commodity items.

Source: DOD Supply System Inventory Reports.

Chart 2

SECONDARY INVENTORIES OF LONG SUPPLY - OVERALL GROWTH 186 PERCENT BETWEEN 1980 AND 1987



Secondary items include spare parts, repair parts, and commodity items.

Source: DOD Supply System Inventory Reports.

Chart 3

DOD COST OF SECONDARY ITEMS - AFAO VERSUS LONG SUPPLY

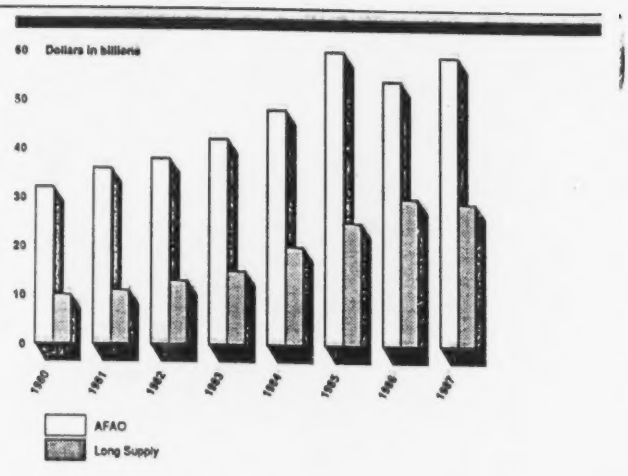
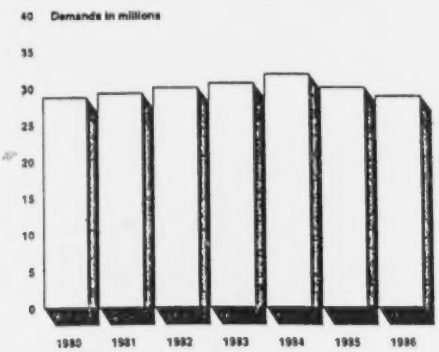


Chart 4

DEMANDS FOR SECONDARY ITEMS

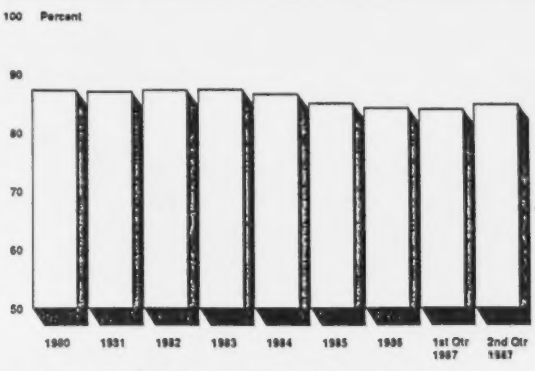


Secondary items include spare parts, repair parts, and commodity items.

Source: DOD.

Chart 5

SUPPLY AVAILABILITY OF SECONDARY ITEMS



Secondary items include spare parts, repair parts, and commodity items.

Source: DOD.

Department of Defense

SUPPLY SYSTEM INVENTORY REPORT

September 30, 1987

Prepared Annually by
Washington Headquarters Services
Directorate for Information
Operations and Reports

FOREWORD

The Department of Defense (DoD) Supply System Inventory Report is an annual publication. It provides summary statistics on the status of DoD supply system inventories to Supply Policy Directorate of the Office of Assistant Secretary of Defense for Production and Logistics. The report summarizes, by dollar value, inventories by DoD component and material category.

The Department of the Army, Navy, Marine Corps, Air Force and Defense Logistics Agency are required to submit reports. The Navy submits the reports for both the Department of the Navy and Headquarters Marine Corps.

Commodities in this publication are grouped into two categories for comparision purposes - "Principal Items" and "Secondary Items." "Principal Items" are primarily composed of systems and weapons. However, "Secondary Items," which support them, may also be included in the category.

DoD Instruction 4140.18, "Inventory Management Reports of Material Assets," dated November 9, 1981, provides guidance for the collecting and reporting of the required information. Also included are definitions of the terms used in this publication.

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TABLE 1.0A

DEPARTMENT OF DEFENSE SUPPLY SYSTEMS INVENTORIES
(Billions of Dollars)

PRINCIPAL ITEMS

Fiscal Year	Total a/	Approved Force Acquisition	Approved Force Retention Stock	Economic Retention Stock	Contingency Retention Stock	Potential DoD Excess	Numeric b/	Unstratified Assets
1969	22.8	17.1	0.9	1.7	1.4	1.1	-	0.6
1970	22.5	17.6	0.5	1.9	1.2	1.1	-	0.2
1971	22.5	17.8	0.6	1.3	1.1	1.7	-	-
1972	21.8	16.8	0.6	1.5	1.0	1.3	-	0.6
1973	19.4	14.2	0.8	1.5	1.2	1.3	-	0.4
1974	22.7	16.6	1.0	1.9	1.7	1.1	-	0.4
1975	29.9	23.0	1.5	2.6	1.5	0.9	-	0.4
1976	27.5	21.0	1.0	2.8	1.5	1.0	-	0.2
1977	26.7	19.3	0.9	2.8	2.3	1.2	-	0.2
1978	26.2	18.3	1.6	3.1	2.1	1.5	-	0.4-
1979	30.6	22.7	1.3	3.3	1.9	1.1	-	0.3
1980	31.9	24.5	1.7	2.6	1.6	1.3	-	0.2
1981	40.0	32.2	1.1	2.3	2.0	1.9	-	0.5
1982	47.4	38.8	1.0	2.8	2.3	1.6	*	0.9
1983	53.6	45.0	1.0	2.5	2.5	1.4	0.5	0.7
1984	61.9	50.8	1.1	2.8	3.0	2.6	0.2	1.4
1985	69.2	56.4	1.5	3.2	2.9	3.2	0.8	1.4
1986	74.9	59.6	2.7	3.2	4.4	2.6	0.6	1.8
1987	142.9	122.8	9.1	3.7	4.3	1.7	*	1.3

* - Less than $100 million

a/ Figures may not add to totals due to rounding
b/ New category effective as of November 9, 1981

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TABLE 1.0B

DEPARTMENT OF DEFENSE SUPPLY SYSTEMS INVENTORIES
(Billions of Dollars)

SECONDARY ITEMS c/

Fiscal Year	Total a/	Approved Force Acquisition	Approved Force Retention Stock	Economic Retention Stock	Contingency Retention Stock	Potential DoD Excess	Numeric b/	Unstratified Assets
1969	24.5	13.7	0.1	3.2	1.1	3.7	-	2.7
1970	24.8	15.3	0.2	2.9	0.6	4.2	-	1.8
1971	24.0	15.0	0.1	2.2	1.0	3.9	-	1.8
1972	22.4	15.2	-	2.2	1.2	2.7	-	1.1
1973	22.7	15.1	-	2.5	1.5	2.7	-	0.9
1974	24.3	15.7	-	3.2	1.7	2.8	-	0.9
1975	26.8	17.7	-	3.0	2.1	2.9	-	1.1
1976	28.5	18.9	-	3.3	2.8	2.8	-	0.7
1977	30.7	21.3	0.4	2.4	3.5	2.4	-	0.7
1978	32.6	23.2	0.1	2.4	4.0	2.2	-	0.7
1979	36.4	26.0	0.1	2.5	4.0	2.6	-	1.2
1980	43.4	32.2	0.1	2.7	4.9	2.5	-	1.0
1981	48.3	35.5	0.1	2.8	5.3	3.0	-	1.6
1982	54.7	37.6	0.1	3.2	6.4	3.0	*	4.4
1983	60.6	42.0	0.2	4.2	6.3	4.1	*	3.8
1984	70.5	47.5	0.2	5.4	6.0	7.1	0.9	3.4
1985	92.8	60.3	0.3	6.6	10.8	5.6	2.0	7.2
1986	88.5	54.3	0.2	7.5	14.6	5.5	1.7	4.7
1987	94.1	59.0	0.3	7.7	12.9	5.0	3.3	5.8

* - Less than $100 million

a/ Figures may not add to totals due to rounding
b/ New category effective as of November 9, 1981
c/ Secondary items include uncategorized and shipboard supplies for years prior to 1986

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Directorate for Information
Operations and Reports

TABLE 1.0C

DEPARTMENT OF DEFENSE SUPPLY SYSTEMS INVENTORIES
(Billions of Dollars)

PRINCIPAL AND SECONDARY ITEMS c/

Fiscal Year	Total a/	Approved Force Acquisition	Approved Force Retention Stock	Economic Retention Stock	Contingency Retention Stock	Potential DoD Excess	Numeric b/	Unstratified Assets
1969	47.3	30.8	1.0	4.9	2.5	4.8	-	3.3
1970	47.3	32.9	0.7	4.8	1.8	5.3	-	1.8
1971	46.5	32.8	0.7	3.5	2.1	5.6	-	1.8
1972	44.2	32.0	0.6	3.7	2.2	4.0	-	1.7
1973	42.1	29.3	0.8	4.0	2.7	4.0	-	1.3
1974	47.0	32.3	1.0	5.1	3.4	3.9	-	1.3
1975	56.7	40.7	1.5	5.6	3.6	3.8	-	1.5
1976	56.0	39.9	1.0	6.1	4.3	3.8	-	0.9
1977	57.4	40.6	1.3	5.2	5.8	3.6	-	0.9
1978	58.8	41.5	1.7	5.5	6.1	3.7	-	0.3
1979	67.0	48.7	1.4	5.8	5.9	3.7	-	1.5
1980	75.3	56.7	1.8	5.3	6.5	3.8	-	1.2
1981	88.3	67.7	1.2	5.1	7.3	4.9	-	2.1
1982	102.2	76.4	1.1	6.0	8.7	4.6	0.1	5.3
1983	114.2	87.0	1.2	6.7	8.8	5.5	0.5	4.5
1984	132.4	98.3	1.3	8.2	9.0	9.7	1.1	4.8
1985	162.0	116.7	1.8	9.8	13.7	8.8	2.6	8.6
1986	163.4	113.9	2.9	10.7	19.0	8.1	2.3	6.5
1987	237.0	181.8	9.4	11.4	17.2	6.7	3.3	7.1

* - Less than $100 million

a/ Figures may not add to totals due to rounding
b/ New category effective as of November 9, 1981
c/ Secondary items include uncategorized and shipboard supplies for years prior to 1986

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TABLE 1.1A

DEPARTMENT OF DEFENSE SUPPLY SYSTEM INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars							
		Unstratified	Transferable/Disposable Stocks		Retention Stocks			Potential DoD Excess	Total
			Approved Force Acquisition	Approved Force Level	Economic	Contingency	Numeric		
Principal Items									
00 Weapons	2,052	7,887	317,372		42,597	1,913		16,834	386,603
01 Major Aircraft Subsystems & Related Equipment	74,365	3,375-	1,522,797	1,976	1,229,200	796		110,868	2,862,262
02 Major Ship Subsystems, Small Craft & Related Equipment	7,774	1,617	1,479,702	98,962	22,260	180,865		10,486	1,793,892
03 Munitions & Related Equipment	1,583	61,688	20,251,178	2,594,693	1,579,608	3,795,625	15,983	691,537	28,990,312
04 Missile Systems & Related Equipment	8,455	286,592	16,026,670	133,573	216,827	57,631	1,341	120,210	16,842,844
05 Tanks, Combat & Tactical Vehicles		10,652	59,558,666	5,597,404				1,869	65,168,591
06 Support Vehicles & Railway Equipment	3,516	9,163	333,301		2,024			21,949	366,437
07 Electronics, Communications, Control & Information Systems, & Related Equipment	13,537	49,135	7,677,761	242,532	283,170	85,945		520,015	8,858,558
08 Propulsion Systems, Aircraft Engines, & Related Equipment	73	773,021	8,338,611					48,427	9,160,059
09 Uncategorized Major Equipment	26,984	60,019	7,280,447	436,247	294,843	181,475		165,970	8,419,001
TOTAL PRINCIPAL ITEMS	138,319	1,256,399	122,786,505	9,105,387	3,670,529	4,304,250	17,324	1,708,165	142,848,559

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Operations and Reports

TABLE 1.1B

DEPARTMENT OF DEFENSE SUPPLY SYSTEM INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars							
		Unstratified	Approved Force Acquisition	Transferable/Disposable Stocks Retention Stocks: Approved Force Level	Economic	Contingency	Numeric	Potential DoD Excess	Total
Secondary Items									
10 Aircraft Components & Parts	345,228	3,376,195	30,739,895	189,996	3,605,732	8,979,107	513,091	487,811	47,871,827
11 Missile Parts	26,015	14,584	1,768,911	9	568,031	735,879	214,593	213,725	3,515,732
12 Weapons Parts	40,355	105,085	1,242,857	3,298	267,254	360,177	140,274	221,245	2,340,190
13 Tank & Vehicle Parts	281	105,900	2,767,972	281	175,521	219,997	523,395	42,243	3,835,309
14 Ship & Submarine Parts	351,313	1,202,866	4,412,282	79,208	891,238	1,394,800		1,268,678	9,249,072
15 Electronics, Communications, Control & Information Systems, & Related Parts	35,474	42,517	2,765,870	475	749,782	903,813	489,995	440,851	5,398,303
16 Construction, Industrial & General Supplies	1,997,328	357,349	6,301,224	346	1,190,347	159,921	1,275,753	1,629,199	10,914,139
17 Petroleum - Oil Lubricants	188	232,766	3,173,939		1,037		1,865		3,409,607
18 Clothing & Textiles		59,139	2,009,516		121,636	306	65,675	92,518	2,348,790
19 Subsistence	20,118	208,122	1,184,503				30		1,392,655
20 Medical-Dental Materiel	64,000	66,302	737,356		43,429	4,135	23,655	35,363	910,240
21 Uncategorized Minor Equipment, Materials & Supplies	1,788,195	47,311	1,917,691		130,528	94,773	76,298	538,615	2,805,214
TOTAL SECONDARY ITEMS	4,678,483	5,818,136	59,022,016	253,613	7,744,535	12,857,908	3,324,622	4,970,248	93,991,078
Stock Funds Subtotal	4,456,931	4,976,287	31,535,531	249,127	3,667,908	7,784,972	2,143,178	4,018,485	54,375,488
Investment Funds Subtotal	221,552	841,849	27,486,485	4,486	4,076,627	5,072,936	1,181,444	951,763	39,615,590
TOTAL PRINCIPAL & SECONDARY ITEMS	4,816,802	7,074,535	181,808,521	9,359,000	11,415,064	17,162,158	3,341,946	6,678,413	236,839,637

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Operations and Reports

SUPPLY SYSTEM INVENTORY REPORT

Principal Items - September 30, 1987

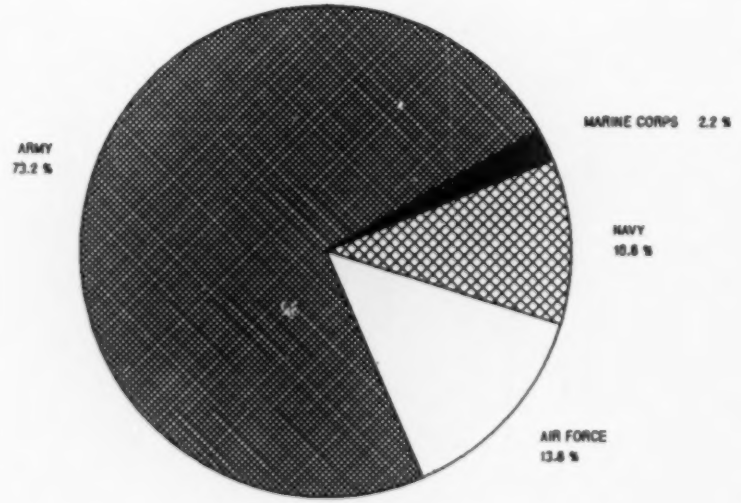

Figure 1

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SUPPLY SYSTEM INVENTORY REPORT

Secondary Items - September 30, 1987

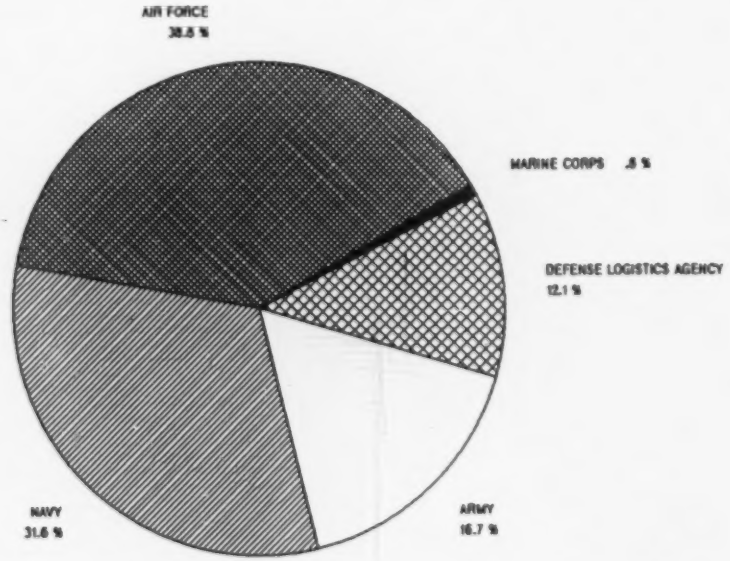

Figure 2

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TABLE I.2A

DEPARTMENT OF ARMY SUPPLY SYSTEMS INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars						
		Unstratified	Transferable/Disposable Stocks					
			Approved Force Acquisition	Approved Force Level	Retention Stocks: Economic	Retention Stocks: Contingency	Retention Stocks: Numeric	Potential DoD Excess	Total
Principal Items									
00 Weapons									
01 Major Aircraft Subsystems & Related Equipment			1,021,460	1,976					1,023,436
02 Major Ship Subsystems, Small Craft & Related Equipment									
03 Munitions & Related Equipment			14,574,075	2,353,818	889,596	229,469	11,577	394,477	18,453,012
04 Missile Systems & Related Equipment			6,377,542	133,573					6,511,115
05 Tanks, Combat & Tactical Vehicles			59,091,209	5,597,404					64,688,613
06 Support Vehicles & Railway Equipment									
07 Electronics, Communications, Control & Information Systems, & Related Equipment			6,754,147	242,449					6,996,596
08 Propulsion Systems, Aircraft Engines, & Related Equipment									
09 Uncategorized Major Equipment			6,401,002	431,822					6,832,824
TOTAL PRINCIPAL ITEMS			94,219,435	8,761,042	889,596	229,469	11,577	394,477	104,505,596

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Operations and Reports

TABLE 1.2B

DEPARTMENT OF ARMY SUPPLY SYSTEMS INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars							
		Unstratified	Transferable/Disposable Stocks		Retention Stocks				
			Approved Force Acquisition	Approved Force Level	Economic	Contingency	Numeric	Potential DoD Excess	Total
Secondary Items									
10 Aircraft Components & Parts		54,768	3,347,096		305,723	483,454	513,091	125,909	4,830,041
11 Missile Parts		19,748	643,122		97,018	239,902	211,483	144,449	1,355,722
12 Weapons Parts		40,790	849,533		126,822	236,877	88,604	11,337	1,353,963
13 Tank & Vehicle Parts		102,956	2,718,631		170,427	217,548	500,141	36,904	3,746,607
14 Ship & Submarine Parts									
15 Electronics, Communications, Control & Information Systems, & Related Parts		28,669	996,905		253,882	416,550	146,384	73,209	1,915,599
16 Construction, Industrial & General Supplies		49,816	254,475		2,723			1,536	308,550
17 Petroleum - Oil Lubricants		2,999	57,474		1,037		1,865		63,375
18 Clothing & Textiles		11,520	649,387		9,005		43,650		713,562
19 Subsistence		73,000	238,684				30		311,714
20 Medical-Dental Materiel		6,694	194,477		19,388		23,655		244,214
21 Uncategorized Minor Equipment, Materials & Supplies		65,429	563,062		78,860	91,426	76,298	15,639	890,712
TOTAL SECONDARY ITEMS		456,389	10,512,846		1,084,885	1,685,757	1,605,199	408,983	15,734,059
Stock Funds Subtotal		456,389	4,796,075		540,907	980,594	567,550	183,045	7,524,560
Investment Funds Subtotal			5,716,771		523,978	705,163	1,037,649	225,938	8,209,499
TOTAL PRINCIPAL & SECONDARY ITEMS		456,389	104,732,281	8,761,042	1,954,481	1,915,226	1,616,776	803,460	120,239,655

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Directorate for Information
Operations and Reports

TABLE 1.3A

DEPARTMENT OF NAVY SUPPLY SYSTEMS INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars							
			Transferable/Disposable Stocks						
		Unstratified	Approved Force Acquisition	Approved Force Level	Retention Stocks Economic	Retention Stocks Contingency	Potential DoD Excess Numeric	Potential DoD Excess	Total
Principal Items									
00 Weapons	814	7,887	294,193			1,913		2,343	306,336
01 Major Aircraft Subsystems & Related Equipment		3,375-	40,807						37,432
02 Major Ship Subsystems, Small Craft & Related Equipment	7,774	1,617	1,479,702	98,962	22,260	180,865		10,486	1,793,892
03 Munitions & Related Equipment		61,688	2,933,154	3,047	224,549	790,641		177,530	4,190,609
04 Missile Systems & Related Equipment	677	276,246	4,725,558		81,719	57,631	1,341	77,221	5,219,716
05 Tanks, Combat & Tactical Vehicles									
06 Support Vehicles & Railway Equipment		1,759	19						1,778
07 Electronics, Communications, Control & Information Systems, & Related Equipment	3,336	26,575	359,612	83	44,079	85,945		117,031	633,325
08 Propulsion Systems, Aircraft Engines, & Related Equipment		773,021	1,506,497					48,427	2,327,945
09 Uncategorized Major Equipment	10,978	42,961	596,450	4,425	80,785	181,475		44,999	951,095
TOTAL PRINCIPAL ITEMS	23,579	1,188,379	11,935,992	106,517	453,392	1,298,470	1,341	478,037	15,462,128

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Directorate for Information
Operations and Reports

TABLE 1.3B

DEPARTMENT OF NAVY SUPPLY SYSTEMS INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars							
		Unstratified	Transferable/Disposable Stocks						
			Approved Force Acquisition	Approved Force Level	Retention Stocks			Potential DoD Excess	Total
					Economic	Contingency	Numeric		
Secondary Items									
10 Aircraft Components & Parts	233,448	2,556,098	8,290,915	169,996	692,677	5,046,010		31,759	16,787,455
11 Missile Parts		4,726-	292,448		183,914	70,140		4,304	546,080
12 Weapons Parts	35,005	52,838	248,737	3,095	120,247	118,438	33,508	200,481	777,344
13 Tank & Vehicle Parts									
14 Ship & Submarine Parts	351,313	1,202,866	4,412,282	79,208	891,238	1,394,800		1,268,678	9,249,072
15 Electronics, Communications, Control & Information Systems, & Related Parts									
16 Construction, Industrial & General Supplies	15,960	4,878	31,018		1,122	6,359		4,568	47,945
17 Petroleum - Oil Lubricants	92	65,180	259,978						325,158
18 Clothing & Textiles									
19 Subsistence	10,118	13,247	155,692						168,939
20 Medical-Dental Materiel									
21 Uncategorized Minor Equipment, Materials & Supplies	1,795,493	18,431-	1,244,838		35,583			518,505	1,780,495
TOTAL SECONDARY ITEMS	2,441,429	3,871,950	14,935,908	252,299	1,924,781	6,635,747	33,508	2,028,295	29,682,488
Stock Funds Subtotal	2,401,489	3,805,299	14,266,941	248,595	1,591,507	6,396,990		1,817,395	28,126,727
Investment Funds Subtotal	39,940	66,651	668,967	3,704	333,274	238,757	33,508	210,900	1,555,761
TOTAL PRINCIPAL & SECONDARY ITEMS	2,485,008	5,060,329	26,871,900	358,816	2,378,173	7,934,217	34,849	2,506,332	45,144,616

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Directorate for Information
Operations and Reports

TABLE 1.4A

MARINE CORPS SUPPLY SYSTEMS INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars							
		Unstratified	Transferable/Disposable Stocks		Retention Stocks		Potential DoD Excess		Total
			Approved Force Acquisition	Approved Force Level	Economic	Contingency	Numeric		
Principal Items									
00 Weapons									
01 Major Aircraft Subsystems & Related Equipment									
02 Major Ship Subsystems, Small Craft & Related Equipment									
03 Munitions & Related Equipment	133		558,742	237,828	301,241	116,442	4,406	119,528	1,338,185
04 Missile Systems & Related Equipment		10,346	612,787					1,692	624,825
05 Tanks, Combat & Tactical Vehicles		10,652	467,457					1,869	479,978
06 Support Vehicles & Railway Equipment		7,404	329,524					21,803	358,731
07 Electronics, Communications, Control & Information Systems, & Related Equipment		22,560	218,440					13,249	254,249
08 Propulsion Systems, Aircraft Engines, & Related Equipment									
09 Uncategorized Major Equipment		17,058	92,277					848	110,183
TOTAL PRINCIPAL ITEMS	133	68,020	2,279,227	237,828	301,241	116,442	4,406	158,987	3,166,151

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Operations and Reports

TABLE 1.4B

MARINE CORPS SUPPLY SYSTEMS INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars							
			Transferable/Disposable Stocks						
			Approved Force Acquisition	Approved Force Level	Retention Stocks: Economic	Retention Stocks: Contingency	Potential DoD Excess: Numeric	Potential DoD Excess	Total
Secondary Items									
10 Aircraft Components & Parts									
11 Missile Parts		438-	28,402	9	7,706		3,110	5,359	44,148
12 Weapons Parts		11,457	72,641	203	2,411	275	18,162	4,202	109,351
13 Tank & Vehicle Parts		2,944	40,150	281	1,538	78	23,254	4,153	72,398
14 Ship & Submarine Parts									
15 Electronics, Communications, Control & Information Systems, & Related Parts		3,448	111,132	475	16,411	2,280	67,490	18,830	220,066
16 Construction, Industrial & General Supplies		14,831	92,121	346	2,374	1,096	16,105	7,801	134,674
17 Petroleum - Oil Lubricants		698	1,271						1,969
18 Clothing & Textiles		7,527	95,412		116		20,625	8,937	132,617
19 Subsistence		48,394							48,394
20 Medical-Dental Materiel									
21 Uncategorized Minor Equipment, Materials & Supplies									
TOTAL SECONDARY ITEMS		88,861	441,129	1,314	30,556	3,729	148,746	49,282	763,617
Stock Funds Subtotal		78,992	228,645	532	1,855	3,303	38,459	19,960	371,748
Investment Funds Subtotal		9,869	212,484	782	28,701	426	110,287	29,322	391,871
TOTAL PRINCIPAL & SECONDARY ITEMS	133	156,881	2,720,356	239,142	331,797	120,171	153,152	208,269	3,929,768

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Operations and Reports

TABLE 1.5A

DEPARTMENT OF AIR FORCE SUPPLY SYSTEMS INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars						
		Unstratified	Transferable/Disposable Stocks		Retention Stocks			Total
			Approved Force Acquisition	Approved Force Level	Economic	Contingency	Potential DoD Excess	
Principal Items								
00 Weapons	1,238		23,179		42,597		14,491	80,267
01 Major Aircraft Subsystems & Related Equipment	74,365		460,530		1,229,200	796	110,868	1,801,394
02 Major Ship Subsystems, Small Craft & Related Equipment								
03 Munitions & Related Equipment	1,450		2,185,207		164,222	2,659,073	4	5,008,506
04 Missile Systems & Related Equipment	7,778		4,310,783		135,108		41,297	4,487,188
05 Tanks, Combat & Tactical Vehicles								
06 Support Vehicles & Railway Equipment	3,516		3,758		2,024		146	5,928
07 Electronics, Communications, Control & Information Systems, & Related Equipment	10,201		345,562		239,091		389,735	974,388
08 Propulsion Systems, Aircraft Engines, & Related Equipment	73		6,832,114					6,832,114
09 Uncategorized Major Equipment	15,986		190,718		214,058		120,123	524,899
TOTAL PRINCIPAL ITEMS	114,607		14,351,851		2,026,300	2,659,869	676,664	19,714,684

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Directorate for Information
Operations and Reports

TABLE 1.5B

DEPARTMENT OF AIR FORCE SUPPLY SYSTEMS INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars							
		Unstratified	Transferable/Disposable Stocks						
			Approved Force Acquisition	Approved Force Level	Retention Stocks Economic	Retention Stocks Contingency	Retention Stocks Numeric	Potential DoD Excess	Total
Secondary Items									
10 Aircraft Components & Parts	111,780	765,329	19,101,884		2,607,332	3,449,643		330,143	26,254,331
11 Missile Parts	26,015		804,939		279,393	425,837		59,613	1,569,782
12 Weapons Parts	5,350		71,946		17,774	4,587		5,225	99,532
13 Tank & Vehicle Parts	291		9,191		3,556	2,371		1,186	16,304
14 Ship & Submarine Parts									
15 Electronics, Communications, Control & Information Systems, & Related Parts	35,474		807,627		266,534	242,805		84,965	1,401,931
16 Construction, Industrial & General Supplies	1,981,368	229,902	3,534,901		513,005	78,077	784,148	754,225	5,894,258
17 Petroleum - Oil Lubricants	74	6,801-	674,945						668,144
18 Clothing & Textiles									
19 Subsistence	10,000	9,941	217,997						227,938
20 Medical-Dental Materiel	64,000	26,975	151,745		5,494			6,110	190,324
21 Uncategorized Minor Equipment, Materials & Supplies	2,702		92,676		16,085	3,347		4,471	118,579
TOTAL SECONDARY ITEMS	2,237,054	1,025,346	25,467,851		3,709,173	4,206,667	784,148	1,245,938	36,439,123
Stock Funds Subtotal	2,055,442	260,017	4,579,588		518,499	78,077	784,148	760,335	6,980,664
Investment Funds Subtotal	181,612	765,329	20,888,263		3,190,674	4,128,590		485,603	29,458,459
TOTAL PRINCIPAL & SECONDARY ITEMS	2,351,661	1,025,346	39,819,702		5,735,473	6,866,536	784,148	1,922,602	56,153,807

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TABLE 1.6B

DEFENSE LOGISTIC AGENCY SUPPLY SYSTEMS INVENTORIES
SEPTEMBER 30, 1987

Department of Defense Standard Categories	Number of Items	Thousands of Dollars							
		Unstratified	Transferable/Disposable Stocks						
			Retention Stocks						
			Approved Force Acquisition	Approved Force Level	Economic	Contingency	Numeric	Potential DoD Excess	Total
Secondary Items									
10 Aircraft Components & Parts									
11 Missile Parts									
12 Weapons Parts									
13 Tank & Vehicle Parts									
14 Ship & Submarine Parts									
15 Electronics, Communications, Control & Information Systems, & Related Parts		10,400	850,206		212,955	247,178	276,121	263,847	1,860,707
16 Construction, Industrial & General Supplies		57,922	2,388,709		671,123	74,389	475,500	861,069	4,528,712
17 Petroleum - Oil Lubricants		170,690	2,180,271						2,350,961
18 Clothing & Textiles		40,092	1,264,717		112,515	306	1,400	83,581	1,502,611
19 Subsistence		63,540	572,130						635,670
20 Medical-Dental Materiel		32,633	391,134		18,547	4,135		29,253	475,702
21 Uncategorized Minor Equipment, Materials & Supplies		313	17,115						17,428
TOTAL SECONDARY ITEMS		375,590	7,664,282		1,015,140	326,008	753,021	1,237,750	11,371,791
Stock Funds Subtotal		375,590	7,664,282		1,015,140	326,008	753,021	1,237,750	11,371,791
Investment Funds Subtotal									
TOTAL PRINCIPAL & SECONDARY ITEMS		375,590	7,664,282		1,015,140	326,008	753,021	1,237,750	11,371,791

Prepared by: Washington Headquarters Services
Directorate for Information
Operations and Reports

United States General Accounting Office

GAO

Briefing Report to Congressional Requesters

July 1988

DEFENSE INVENTORY

Growth in Secondary Items

GAO/NSIAD-88-189BR

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-229462

July 19, 1988

The Honorable Lawton Chiles
Chairman, Committee on
the Budget
United States Senate

The Honorable John Glenn
Chairman, Committee on
Governmental Affairs
United States Senate

As you requested, we are providing the results of our preliminary analysis of growth in the Department of Defense's (DOD) secondary item inventories. You also requested a detailed analysis of inventory growth not related to growth in force structure or increased operations and of inventory increases that could be curtailed with no detrimental effect on readiness. (See app. I.) As agreed with your Offices, we are performing more detailed analyses on these issues and will report on them separately.

Secondary Inventory Value Doubles Between 1980 and 1987

DOD classifies its material inventories as principal items (aircraft, tanks, and ships) or secondary items. DOD defines secondary items as minor end items; replacement, spare, and repair components; personnel support and consumable items. Examples of secondary items include aircraft, tank, and ship components; construction, medical, and dental supplies; and food, clothing, and fuel.

The value of DOD's secondary inventories increased about $51 billion between 1980 and 1987, from about $43 billion to about $94 billion. Navy and Air Force inventories grew the most, with increases of about $19 billion and $18 billion, respectively. The greatest growth Defense-wide was in aircraft components and parts, which grew $30.6 billion. Construction, industrial and general supplies grew $9.2 billion, and ship and submarine parts grew $8.2 billion.

Required stocks grew about $27 billion between 1980 and 1987, while stocks in excess of requirements grew about $19 billion. About $5 billion of the inventory growth was unstratified. The percentage increase in unrequired stocks (186 percent) was more than double the percentage increase in required stocks (84 percent). (See app. II.)

Causes of Growth

Military officials attributed much of the inventory growth to such factors as inflation, modernization, and increased lead time and war reserves. A Logistics Management Institute study attributed 64 percent of inventory growth between 1979 and 1984 to price growth. Military officials also stated that as DOD phased out older equipment, items supporting the equipment shifted from required to unrequired stocks.

We believe that some of the inventory growth may also be attributable to such problems as inaccurate requirements computations that have been the subject of previous audit reports. (See app. III.)

To address your request for a detailed analysis of unrequired growth, we are focusing our continuing efforts on aircraft and ship parts. These categories represent about $39 billion of the $51 billion in secondary inventory growth between 1980 and 1987, and about $12 billion of the $19 billion increase in stocks with no requirements.

Agency Comments

DOD concurred with the findings in this report. (See app. V.)

As arranged with your Offices, unless you publicly announce its contents earlier, we plan no further distribution of this briefing report until 30 days from the date of issue. At that time, we will send copies to the Chairmen, Senate and House Committees on Armed Services and Appropriations; the Secretaries of Defense, the Army, Navy, and Air Force; the Director, Defense Logistics Agency; the Director, Office of Management and Budget; and other interested parties.

If you have any questions, please call me at 275-8412.

Martin M Ferber
Senior Associate Director

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Abbreviations

DLA	Defense Logistics Agency
DOD	Department of Defense
GAO	General Accounting Office

Appendix I

Objectives, Scope, and Methodology

The Chairman, Senate Committee on the Budget, requested that we study the growth in the Department of Defense's (DOD) secondary inventories. He asked that our study include (1) a macro-analysis of the growth, (2) aspects of the growth not related to force structure and increased operating tempos, and (3) growth that could be curtailed with no detrimental effect on readiness or sustainability. The Chairman, Senate Committee on Governmental Affairs, has also expressed an interest regarding these issues.

This briefing report provides a macro-analysis of the inventory growth. We are continuing with additional analyses to address the second and third issues. Our efforts will focus on aircraft and ship parts because they represent about $39 billion of the $51 billion in inventory growth between 1980 and 1987, and about $12 billion of the $19 billion increase in stocks with no requirements.

Our work was performed at the Office of the Assistant Secretary of Defense (Production and Logistics); the Army, Navy, Air Force and Defense Logistics Agency (DLA) headquarters; and the Logistics Management Institute. We obtained DOD-wide inventory data for 1980-87 from DOD's Supply System Inventory and Real and Personal Property reports. We did not verify the accuracy of this data. All inventory amounts cited in the report are as of September 30 of each year.

Subsequent to receiving DOD's comments on the draft report, we obtained and incorporated fiscal year 1987 data into this final report. The 1987 data did not affect the findings.

We analyzed the inventory data to identify the areas in which growth had occurred (such as aircraft and ship parts) and in the types of stocks (required or unrequired). We grouped Approved Force Acquisition Objective[1] stock and Approved Force Retention Stock together because they are categories of required stocks. According to DOD officials, the term "long supply" is used to describe stocks in excess of acquisition requirements. However, DOD's long supply includes Approved Force Retention Stock. These stocks include materials that are not budgeted for but can be used to equip and support U.S.-approved forces from the day war begins until production equals requirements. Our values for stocks with no requirements do not include Approved Force Retention Stocks because they are defined by DOD as required stocks, even if they

[1]The Approved Force Acquisition Objective includes current operating stocks and war reserves.

are not in the budget. Thus, our values for unrequired stocks are less than DOD's values for long supply.

We also interviewed officials and examined documents to identify causes of the growth. We reviewed prior audit reports by DOD and us to identify reported inventory management problems that in the past have contributed to inventory growth.

We conducted our review from May 1987 through June 1988 in accordance with generally accepted government auditing standards.

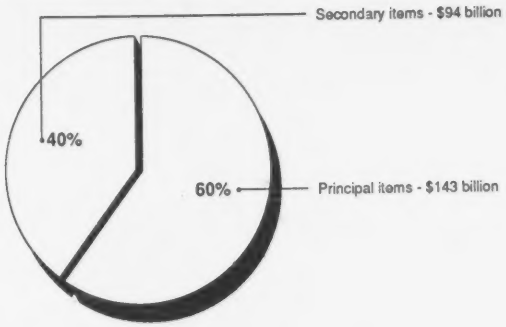
Appendix II

Growth in DOD's Secondary Item Inventory

As of September 30, 1987, DOD reported secondary item inventories valued at $94 billion.[1] Secondary inventories include wholesale inventories, which are controlled at the national level, and retail inventories, which are controlled at lower levels. Supplies aboard ships and issued to troops are generally not included in secondary inventories.

As shown in figure II.1, secondary items represented 40 percent of DOD's reported $237 billion inventory.

Figure II.1: DOD's $237 Billion Inventory of Principal and Secondary Items, September 30, 1987



DOD's inventory of secondary items increased from about $43.4 billion in 1980 to $94 billion in 1987, an increase of about $50.6 billion. During this period the number of different items in the inventory increased from about 3.9 million to about 4.6 million items. Figure II.2 shows the dollar change in DOD's secondary inventory between 1980 and 1987.

Figure II.3 shows the change in inventory by DOD organization. The growth ranged from about $4.1 billion (57 percent) for DLA to about $19 billion (167 percent) for the Navy.

[1]These inventories are primarily at the wholesale level. In addition, there are inventories at the retail level that cannot be analyzed because no detail data on them are available.

Figure II.2: DOD's Secondary Inventory (1980-87)

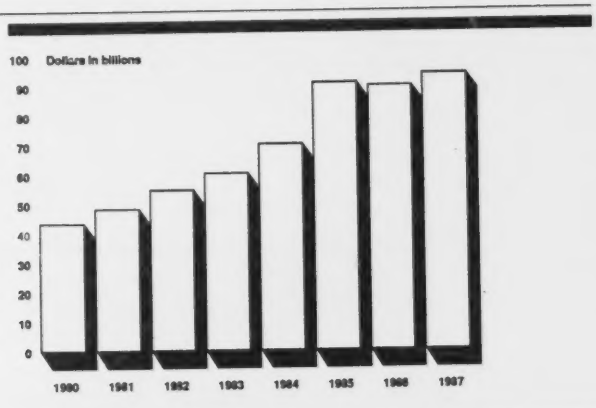
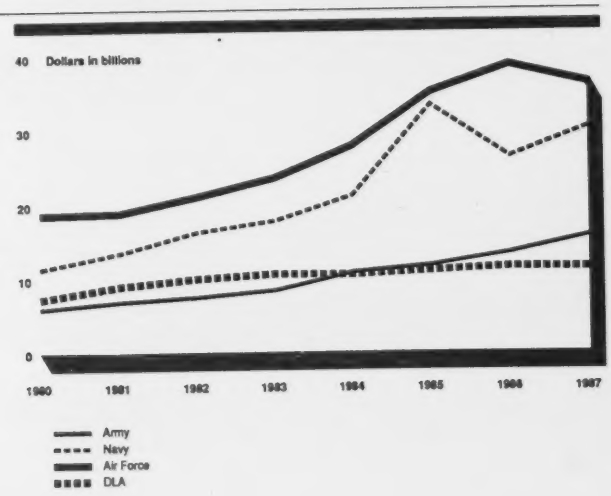


Figure II.3: Army, Navy, Air Force, and DLA Secondary Inventories (1980-87)



The Navy inventory increased by $19 billion (167 percent), from about $11.4 billion in 1980 to about $30.4 billion in 1987. As shown in figure II.3, however, the $26.4-billion 1986 inventory represented a $7-billion decrease from the $33.4-billion 1985 level. The Navy attributed the decrease to such factors as

- reducing stock fund[2] prices as a result of increased competition and the Buy Our Spares Smart program,
- transferring aviation depot level repairable inventories to users, and
- excluding shipboard inventories that were erroneously included in secondary inventories.

The Air Force's inventory grew by $17.8 billion between 1980 and 1987. However, its $36.4 billion 1987 inventory represents a $2.3-billion decrease below its 1986 inventory. According to an Office of the Assistant Secretary of Defense supply official, the decrease was the result of an Air Force effort to correct inaccuracies in previously reported inventories. He explained that the $2.3 billion-decrease was the net result of changes in several inventory categories. For example, the reported inventory of aircraft components and parts decreased by $3.5 billion between 1986 and 1987 while construction, industrial, and general supplies increased by $5 billion.

Growth in Secondary Inventory Categories

DOD has developed standard categories so that service and DLA secondary inventories can be aggregated at the DOD level. Figure II.4 shows the current categories for the secondary inventory and the changes in the inventory from 1980 to 1987.

Three of the categories in figure II.4 represent about 96 percent of the $51 billion increase in the secondary inventory from 1980 to 1987.

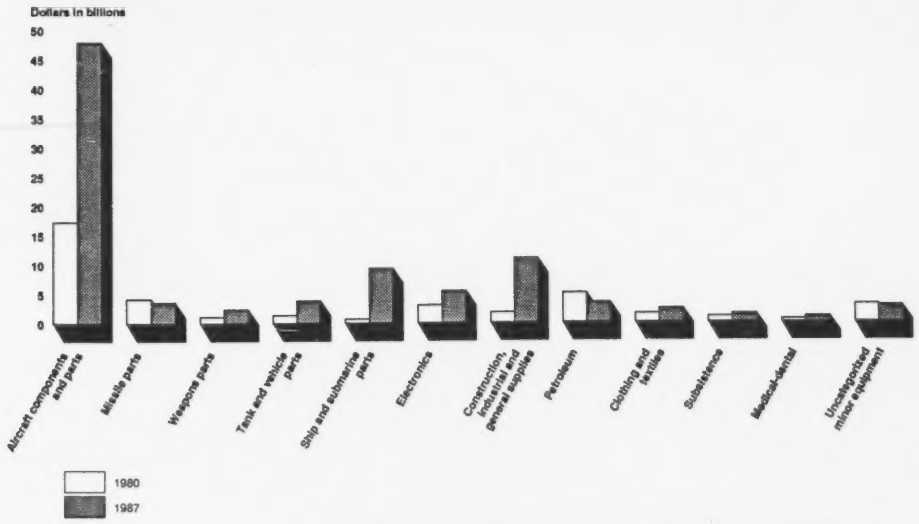
1. Aircraft components and parts increased by $30.6 billion (177 percent).

2. Ship and submarine parts increased by $8.6 billion (1,323 percent).

[2]A stock fund is a system to finance the purchase of material. Proceeds from sales to customers are used to purchase inventory for future sales.

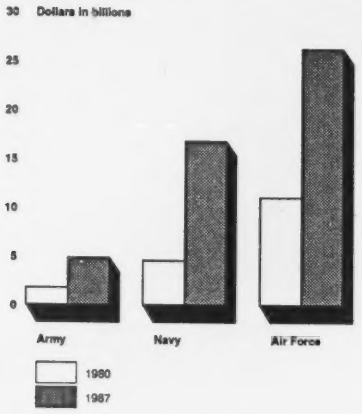
3. Construction, industrial, and general supplies increased by $9.2 billion (523 percent).

Figure II.4: DOD Secondary Inventory by Category (1980 and 1987)



Figures II.5 through II.7 show the distribution of the growth in these four categories by DOD organization. Appendix IV shows the specific numbers for these categories.

Figure II.5: Aircraft Components and Parts by Service (1980 and 1987)

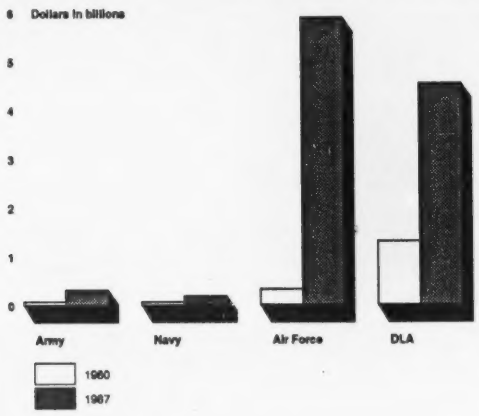


Note: DLA does not report aircraft components and parts in its inventories.

Figure II.6: Navy Ship and Submarine Parts (1980 and 1987)

Note: The Navy is the only Defense component reporting ship and submarine parts.

Figure II.7: Construction, Industrial, and General Supplies by DOD Organization (1980 and 1987)



Classification of Secondary Inventories

DOD categorizes its secondary inventories into six classifications. Two classifications represent required stocks.

1. The Approved Force Acquisition Objective represents current operating stocks plus war reserves.[3]

2. The Approved Force Retention Stock is in addition to the Approved Force Acquisition Objective stock and is required to equip and support the U.S.-approved forces from the day war begins until production equals demand. Unlike Approved Force Acquisition Objective stock, DOD does not budget for retention stocks.

The remaining four classifications represent unrequired stocks, which are in addition to required stocks.

3. The Contingency Retention Stock has no predictable demand or quantifiable requirement and normally would be in the Potential Excess category. However, DOD has decided to retain the stock for possible contingencies.

4. The Economic Retention Stock also has no requirement and normally would be Potential Excess. However, DOD has decided to retain the stock for future peacetime use instead of satisfying possible future needs through procurement.

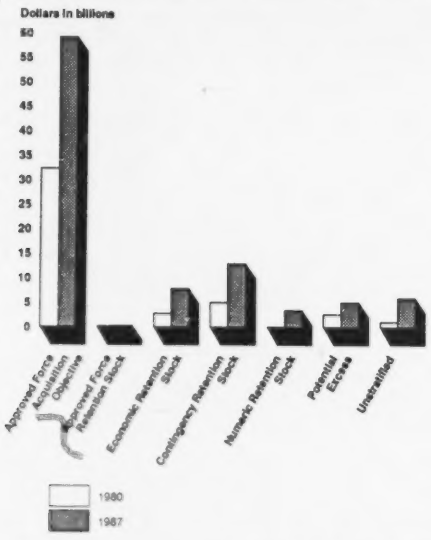
5. The Numeric Retention Stock is the stock for which disposal is currently infeasible or uneconomical, and management has decided to retain it in the supply system. DOD began using this classification in 1982.

6. The Potential Excess is material excess to all authorized retention levels, but DOD has not yet determined it to be excess.

In addition to the above classifications, DOD also has unstratified stocks. According to an Office of the Assistant Secretary of Defense supply official, unstratified stocks represent items in transit. Figure II.8 compares the secondary item inventory classifications in 1980 and 1987.

[3]War reserves are stocks that are stored in peacetime to satisfy increased wartime consumption; they are intended to sustain operations until resupply takes place.

Figure II.8: Classification of DOD's Secondary Item Inventory (1980 and 1987)



Note: DOD had minimal inventories of Approved Force Retention Stock in 1980 and 1987. DOD had no Numeric Retention Stock in 1980. It began using that classification in 1982.

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Table II.1 shows that the dollar growth in required stocks exceeded the dollar growth in unrequired stocks for the Army and Air Force. For the Navy and DLA, growth in unrequired stocks exceeded growth in required stocks. However, the percentage increases for unrequired stocks were greater than those for required stocks for all DOD organizations except the Army.

Table II.1: Comparison of Growth in Required and Unrequired Stocks (1980-87)

Dollars in billions

	Increase in required stocks		Increase in unrequired stocks	
	Amount	Percent	Amount	Percent
Army	$6.7	176	$3.0	171
Navy	7.4	89	7.7	240
Air Force	11.2	78	5.7	133
DLA	1.7	29	2.5	283
Total	**$27.0**	**84**	**$18.8[a]**	**186**

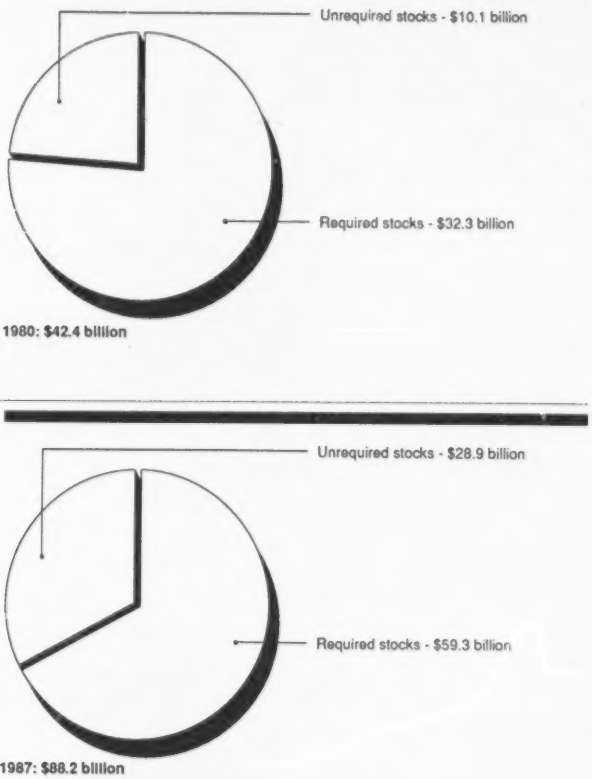
[a]Total does not add due to rounding.

Growth in Required and Unrequired Stocks

Between 1980 and 1987, stocks with no requirements grew at a faster rate than required stocks. Stocks with no requirements grew $18.8 billion (186 percent), while required stocks grew $27 billion (84 percent).[1] In 1980 there was about $3 of required stock for every $1 of unrequired inventory. By 1987 the proportion had decreased to about $2 to $1, as depicted in figure II.9.

[1]The required and unrequired stocks do not include unstratified stocks, which were valued at $1.0 billion in 1980 and $5.8 billion in 1987.

Figure II.9: Comparison of Required and Unrequired Stocks (1980 and 1987)


Unrequired stocks - $10.1 billion
Required stocks - $32.3 billion
1980: $42.4 billion
Unrequired stocks - $28.9 billion
Required stocks - $59.3 billion
1987: $88.2 billion

Note: Unstratified stocks are not included.

Specific material categories had similar growth patterns. As shown in table II.2, dollar growth in required stocks for selected categories was

greater than the growth in stocks with no requirements. Table II.2 also shows that all three of the categories had larger percentage increases in unrequired stocks than in required stocks.

Table II.2: Comparison of Growth in Required and Unrequired Stocks for Selected Material Categories (1980-87)

Dollars in billions

	Increase in required stocks		Increase in unrequired stocks	
	Amount	Percent	Amount	Percent
Aircraft components and parts	$18.1	141	$8.8	184
Ship and submarine parts	4.1	1,084	3.3	1,419
Construction, industrial, and general supplies	5.2	467	3.7	694

Explanations of the Growth in Secondary Item Inventories

In a 1984 study, the Logistics Management Institute attributed 64 percent of the growth in DOD's secondary inventory between 1979 and 1984 to price growth. The study cited support for new weapons systems and increased operations as causing less than half of the remaining growth. The study focused on increases in requirements, which generally precede increases in inventory, to identify factors causing growth. It also cited such contributing factors as longer lead times and safety levels and efforts to increase support for all weapons systems.

Army officials said that during the 1980s, an effort to increase the level of war reserves resulted in increased secondary inventory levels. Additionally, new equipment entering the military forces required more sophisticated and expensive support items, thus increasing the value of the secondary inventory.

Navy officials cited such factors as inflation, support for the 600-ship Navy and fleet modernization, and price changes. The price changes resulted from adding a surcharge for transportation and financing reparable items through the stock fund. The officials explained that when the Navy began financing reparable items through the stock fund, it repriced the items to reflect replacement costs rather than acquisition costs.

DLA and Air Force officials identified increases in lead times as contributing to inventory growth. A DLA official noted that longer lead times result in increased requirements, including increased safety levels. Air Force officials also attributed growth to force modernization, increases in war reserves, a moratorium on disposal of excess items, and inflation.

All the officials said that phasing out older equipment contributed to the growth in stocks with no requirements. They said that items that supported equipment being phased out shifted from required to unrequired stocks as the need for support decreased.

The causes of secondary inventory growth can include both avoidable and unavoidable factors. Inflation, a major unavoidable factor cited by military officials, affects both required and unrequired inventories. Also, previous audits by DOD and us have identified many management weaknesses that have contributed to avoidable increases in secondary inventories. As discussed in appendix III, such weaknesses as inaccurate inventory requirements computations and inadequate inventory controls can be corrected. Opportunities exist to reduce inventories without reducing military capability where these weaknesses have not been corrected.

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Appendix III

Prior Audit Reports Highlight Problems Contributing to Inventory Growth

Since the 1970s, DOD's internal audit groups and we have documented problems affecting secondary item inventory growth. The problems were in such areas as computing inventory requirements, unrequired stocks, and using existing stocks inefficiently.

DOD accepted many recommendations contained in the reports and proposed or initiated corrective actions. However, many of the problems continue. Under the Federal Managers' Financial Integrity Act, DOD components continue to report weaknesses involving secondary inventories.

Inaccurate Requirements Computations Contribute to Inventory Growth

Audit reports from 1974-87 show that inaccurately computed inventory requirements contributed to unnecessary growth in the secondary item inventory. Over 30 reports identified errors or inaccuracies in requirements computations that result from

- disregarding material returns and cancellations,
- using inaccurate lead times and duplicate requirements,
- using a methodology for computing initial spare parts that overstated requirements,
- overstating special stock level requirements, and
- not validating equipment authorizations adequately.

Disregarding Returns and Cancellations

In May 1980, we reported that four of the five Army inventory control points did not fully offset demands with serviceable returns.[1] We concluded that the Army could save tens of millions of dollars by following its regulation that requires using returns to offset demands when computing requirements. DOD concurred with our findings and advised us that the Army had directed each inventory control point to use 100 percent of serviceable returns to offset requirements. In February 1977, we also reported that the Army could save millions of dollars annually by removing invalid demands related to requisition cancellations from its requirements computations.[2]

[1]The Army Can Save Millions Annually by Properly Considering Serviceable Returns in Its Requirements Computations (GAO/LCD-80-64, May 15, 1980).

[2]Procedures and Practices Used by Army and Navy Inventory Managers and Their Shipping Activities to Respond to Requests for Cancellation of Requisitions for Material (GAO/LCD-77-201, Feb. 17, 1977).

Using Inaccurate Lead Times

In a December 1981 report, we identified problems with requirements computations in the Army.[3] The Army Missile Command had overstated requirements for certain items by $12.2 million because of inaccurate lead time data. We recommended that methods for determining lead time for requirements computations be improved. In response, the Army directed the Army Inventory Research Office to determine a more representative lead time value. It also planned to allow inventory control points the flexibility to determine representative administrative lead time.

In January 1987, the DOD Inspector General recommended that air logistics centers improve forecasting lead time by using actual historical lead time.[4] The Inspector General had found that one center had used a longer administrative lead time than necessary to determine worldwide requirements. As a result, the center overstated requirements for F-100 engine spare parts by $28.8 million. The Air Force agreed to direct the centers to use actual historical administrative lead time unless deviations could be justified.

Duplicate Requirements

Five air logistics centers used duplicate requirements, which resulted in unnecessary inventory investment and increased holding costs. In October 1984, we recommended that the Air Force limit inventory investment to the level needed to support mission requirements.[5] By doing so, the centers could reduce inventories and delay obligating about $119 million and reduce holding costs about $21 million. DOD officials agreed that depot-level maintenance requirements were counted twice. However, they disagreed that this practice overstated requirements and resulted in excessive inventories, and they did not implement our recommendations.

Provisioning Method Overstated Requirements

An Air Force provisioning method for F-16 C/D aircraft spares resulted in requirements being overstated by approximately $4.4 million.[6] The Air Force Logistics Command approved the method without verifying

[3]The Army Should Improve Its Requirements Determination System (GAO/PLRD-82-19, Dec. 1, 1981).

[4]F100 Aircraft Engine Spare Parts (Department of Defense Inspector General 87-069, Jan. 16, 1987).

[5]Excessive Air Force Inventories Result From Duplicative Spare Parts Requirements (GAO/NSIAD-85-7, Oct. 25, 1984).

[6]Spares Support for the F-16 C/D Aircraft (Air Force Audit Agency 4126121, Apr. 4, 1985).

whether it was consistent with Air Force and DOD policy. In April 1985, the Air Force Audit Agency concluded that the Air Force Logistics Command should revise procedures to review and approve alternative provisioning methods. By doing so, it could improve the accuracy of spares requirements and provide weapons systems with consistent initial spares support. In response, the Air Force said it would revise Air Force Logistics Command regulations to include improved procedures for reviewing and approving alternative provisioning methodologies.

Overstating Special Stock Level Requirements

In December 1986, we reported that two air logistics centers had overstated special stock levels by $27.9 million due to deficiencies in the method used to compute the amount of stock needed to support operations and to errors by item managers.[7] We recommended that air logistics centers program the recoverable item system to determine special stock level requirements. We believed this action would ensure more accurate requirements and minimize procurement of unneeded material. DOD responded that the Air Force had revised its system for computing stock levels.

Inadequate Validation of Equipment Authorizations

In July 1982, we reported that Air Force supply officers were not monitoring equipment authorizations and revising authorizations when allowances changed.[8] We also noted that the lack of expertise to verify equipment requirements hindered the supply officers in carrying out that role. DOD auditors had identified more than $26 million in invalid Air Force equipment authorizations in 1980. We recommended that the Air Force increase attention to monitoring and validating equipment authorizations. Air Force officials agreed with our recommendations and began mandatory on-site surveillance by major command equipment management teams.

Excessive Inventories

Since the 1970s, many audits have identified excessive inventories. We found 21 audit reports issued between 1974 and 1987 that identified causes of overstocking, such as not cancelling excess stocks on order, not returning material to the wholesale level, unnecessarily procuring materials, and having duplicate demands and inventories.

[7]Military Logistics: Improvements Needed in Managing Air Force Special Stock Levels (GAO/NSIAD-87-34, Dec. 23, 1986).

[8]The Air Force Needs To Exercise More Control Over Equipment Authorizations (GAO/PLRD-82-100, July 27, 1982).

Not Canceling Excess Stocks on Order

In October 1979, we reported that the two air logistics centers had $27.2 million of excess stocks on order. We found that the two centers could have canceled as much as $6.2 million of the orders. However, few of the orders were being canceled because of untimely or ineffective actions by item managers.[9] In February 1983, we reported that if the Air Force did more to correct weaknesses previously reported, it could further increase potential cancellations by $58 million or more.[10]

In August 1987, we reported that two air logistics centers had excess on-order stocks of $103.2 million. We found that out of a $74.2 million sample of excesses on order, the centers had terminated only $1.8 million. We concluded that it would have been cost-effective for the centers to have terminated an additional $24.9 million of the $103.2 million universe. DOD agreed that improvement was needed in the procedures and practices governing terminations of on-order material.[11]

Not Returning Unneeded Material

In January 1981, we reported that Navy fleet policies allowed ships to retain unneeded parts.[12] For example, ships completing supply overhauls could retain parts not used during the previous 5-year interval between supply overhauls. We noted that the Navy could have reduced purchases and repairs, thus saving up to $37 million in 5 years. An additional $34 million could have been saved by identifying and redistributing unneeded stocks. We recommended that the Navy strengthen controls over parts retained on ships. The Navy disagreed with our recommendations because it believed that shipboard spare part inventories are not demand-oriented and that they ensure that a ship can carry out its mission.

In September 1987, we reported that the Army could have used excess items to offset $35.9 million of $41 million in purchases.[13] The excess items were held at nine Army installations. DOD generally agreed with

[9]DOD Can Save Millions Of Dollars By Improving The Management Of Air Force Inventories (LCD-80-6, Oct. 25, 1979).

[10]Continued Improvements Needed In Air Force Procedures and Practices For Identifying and Cancelling Excess On-order Stocks (GAO/PLRD-83-36, Feb. 7, 1983).

[11]Military Procurement: Air Force Should Terminate More Contracts for On-order Excess Spare Parts (GAO/NSIAD-87-141, Aug. 12, 1987).

[12]Supply Support Costs Of Combat Ships Can Be Reduced By Millions And Readiness Enhanced (GAO/LCD-81-9, Jan. 15, 1981).

[13]Inventory Management: Army Needs to Reduce Retail Level Excesses (GAO/NSIAD-87-197, Sept. 2, 1987).

the findings presented in the report. DOD responded that the Army would advise its major commands to report all excess items to the wholesale level and eliminate retention levels for those items for which retention levels are not authorized.

Unnecessary Procurement

In December 1978, we reported that Atlantic and Pacific Fleet aircraft carriers had stock excesses averaging $154 million in 1976 and 1977.[14] One of the primary causes of the excesses was a lack of adequate management controls and supply discipline to prevent the ordering of excessive amounts of material. We concluded that the Navy should improve supply management aboard the carriers to avoid unnecessary inventory investments in the future. The Navy agreed with our findings and recommendations and planned to revise, reemphasize, and enforce its directives on inventory management.

Duplicate Inventories

In October 1986, we estimated that the Navy could reduce inventories up to $116.9 million by eliminating intermediate inventories that duplicate wholesale inventories.[15] Also, the Navy overstated requirements by $46.3 million because two control points erroneously used maximum intermediate inventory levels to set requirements. DOD agreed with our findings and recommendations and outlined in-process actions to correct shortcomings in the requirements determination and distribution systems.

Inefficient Use of Inventories

We identified eight audit reports issued between 1975 and 1984 that addressed inefficient utilization of existing inventories. The reports identified problems caused by

- inadequacies in automated and manual controls,
- lack of screening of existing stocks before new purchases were made, and
- war reserve requirements that were not verified.

[14]Millions of Dollars Can Be Saved By Improved Management Of Aircraft Carrier Inventories (GAO/LCD-78-221, Dec. 22, 1978).

[15]Navy Supply: Intermediate Inventories Can Be Reduced (GAO/NSIAD-87-19, Oct. 28, 1986).

Inadequate Controls

In November 1975, we reported that Army units had requisitioned and retained excess stock valued at tens of millions of dollars yearly.[16] Automated and manual procedures did not provide for identifying, canceling, or redistributing on-order or on-hand excess stocks.

Lack of Screening

In March 1981, we reported that the Air Force was purchasing modification kits from contractors even though many of the items contained in kits were available within the DOD supply system.[17] We noted that the Air Force Audit Agency had reported in 1979 that using Air Force- and DOD-managed items for the B-52 modification program could have saved the Air Force $21 million. We also reported that using the DOD supply system could have saved $9 million in the C-5A modification program. Air Force officials agreed that they should screen the DOD supply system to identify in-stock items that could be used to support the modification programs, and they stated that they planned to clarify program regulations and instructions.

Deficiencies in Prepositioned War Reserve Requirements

In a June 1982 report, the Defense Audit Service concluded that DLA could have made better use of $59 million worth of assets.[18] Items kept for war reserve requirements were available to satisfy deficiencies in the military services' higher priority needs for prepositioned items. DOD agreed to review alternatives for redistributing DLA stocks to fill prepositioned war reserve requirements.

DOD's Internal Control Reports Identify Similar Weaknesses

Effective internal controls ensure that funds used and activities conducted by agencies are consistent with laws, regulations, and policies and that resources are safeguarded against waste, loss, and misuse. Under DOD's internal control program, each DOD component is required to report internal control weaknesses to the Secretary of Defense annually. DOD components have reported many weaknesses involving secondary inventories.

[16]Improved Inventory Management Could Provide Substantial Economies For The Army (LCD-76-205, Nov. 21, 1975).

[17]Improved Management Of Air Force Modification Programs Can Save Millions (GAO/PLRD-81-5, Mar. 16, 1981).

[18]Report on the Audit of the Defense Logistics Agency War Reserve Program (Defense Audit Service 82-100, June 7, 1982).

- In 1983 the Army reported that its policy and procedures for managing war reserve stocks had not been implemented effectively. Items were stocked at low-priority U.S. locations when higher priority overseas sites were short on those stocks.
- In 1984 the Navy reported that shipboard inventories substantially exceeded authorized levels and that procedures were not in place to identify excess material supporting a missile program that had ended.
- In 1986 the Air Force reported that spare parts available from excess aircraft engines were not being properly matched to spare parts requirements. As a result, aircraft engines projected to be excess were not programmed to reclaim parts to satisfy requirements.

As part of the internal control program, DOD has implemented or has planned actions to correct the reported problems.

Appendix IV

Inventory Data for Selected Material Categories

Category/DOD organization	Dollars in billions	
	1980	1987
Aircraft components and parts		
Army	$1.74	$4.83
Navy	4.52	16.79
Air Force	11.03	26.25
Ship and submarine parts		
Navy	0.65	9.25
Construction, industrial, and general supplies		
Army	0.07	0.31
Navy	0.06	0.18
Air Force	0.32	5.89
DLA	1.30	4.53

Appendix V

Comments From the Assistant Secretary of Defense (Production and Logistics)

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-8000

PRODUCTION AND LOGISTICS

(L/SD)

MAY [illegible]

Mr. Frank C. Conahan
Assistant Comptroller General
National Security and
International Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "DEFENSE INVENTORY: Growth in Secondary Items," dated March 31, 1988 (GAO Code 391595/OSD Case 7582).

The Department has reviewed the report, concurs with the findings, and has no further comment. The DoD appreciates the opportunity to comment on this draft report.

Sincerely,

Marle Freitag, MG, USA
Military Deputy

JOHN GLENN, OHIO, CHAIRMAN

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United States Senate
COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

November 2, 1987

The Honorable Edward C. Aldridge, Jr.
Secretary of the Air Force
The Pentagon
Washington, D.C. 20330-1000

Dear Mr. Secretary:

As Chairman of the Governmental Affairs Committee, I am conducting an in-depth review of what appears to be serious problems in DOD's requirements modeling and inventory management practices. On October 27, 1987, we held our first hearing on this issue. In that hearing questions arose concerning Air Force practices. There appears to be billions of dollars in aircraft spare parts that were already in long supply and additional hundreds of millions of dollars in on-order parts that are destined for long supply. Second, we did not receive satisfactory answers on why there was so much growth in long supply inventory.

Let me quote what the Comptroller General submitted for the record at our hearing.

> "In January 1987, we reported that excess inventory levels in the Air Force were growing. For the 1-year period ending March 31, 1986, the Air Force's on-hand and on-order excess aircraft spare parts had increased from $3.4 billion to $9.4 billion."

We recognize that GAO is equating "excess" with what DOD describes as "long supply". Nevertheless, GAO's figures were published in a GAO report NSIAD-87-48BR, dated January 13, 1987. The Air Force commented on that report and did not challenge the GAO figures.

Information recently received from Air Force staff last week indicates that Air Force disagrees with those GAO numbers, and Air Force staff suggested the correct figures are as follows: the Air Force's on-hand and on-order contingency retention and potential excess aircraft spare parts grew from $2.5 billion to $3.6 billion during the year ending March 31, 1986. Eight hundred million dollars of the $3.6 billion was on-order excess and contingency stocks.

Please verify and provide me with the amount of on-hand and on-order aircraft spare parts at the the beginning and end of the one-year period ending March 31, 1986. This information should be supplied for each of the long supply categories (economic retention, contingency retention, numeric retention, and potential excess) with breakdowns for on-hand and on-order amounts. I also request the same information be provided for the most recent period.

Second, I would appreciate answers to the following questions:

1. Why are there so many aircraft spare parts in long supply?

2. Why did long supply aircraft spares grow so much during the one-year period ending March 1987?

3. More importantly, why did the on-order spare parts grow so much? It seems to me that actions could have been taken to cancel the contracts rather than accept parts for which there are no known present peacetime or wartime requirements. On this question, I would also like a list of all on-order contracts as of March 31, 1986, for items which will go to long supply. The list should show the contractors, the amount of the contract, a general description of the spares being purchased, and the category of long supply to which the spares will be assigned. Further, I would like examples of contracts which demonstrate why cancellation was impossible.

4. Please explain how these aircraft spare requirements are generated. Are they contractor initiated requirements, or is the Air Force doing the computations which result in these unnecessary spares burdening the supply system?

5. Growth in excess inventory in this time of budget constraints is unconscionable. What specifically is the Air Force doing to reduce this amount and what is your timeframe for achieving a reduction?

I have designated Committee Counsel Stephen Ryan and staff member Carl Bogar to coordinate my inquiry in this area. They can be reached on 224-4751. I would appreciate a prompt response. I look forward to your response and to working with you to reduce our long supply inventory.

Sincerely,

John Glenn
Chairman

JHG/cb

DEPARTMENT OF THE AIR FORCE
WASHINGTON, D.C. 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

DEC. 1 5 1987

The Honorable John Glenn
Chairman
Committee on Governmental Affairs
United States Senate
Washington, D.C. 20510

Dear Chairman Glenn:

This is in response to your November 2, 1987 letter to the Secretary of the Air Force.

We have taken a hard look at the Air Force inventory numbers reported by the Department of Defense. There has been a growth in long supply assets as indicated on the attached charts. The trends are consistent with the overall DOD numbers briefed by your staff on October 27, 1987. Unfortunately, the Air Force data included a large error that was not detected until after the March 31, 1986 report was submitted. One item alone overstated the long supply inventory by $3.3 billion.

The three attached charts show the reported inventory data (on hand only) for aircraft spare parts, the corrected on hand data, and a breakout for the on order inventory. The DOD inventory report includes on hand stocks only. You should note that the Air Force does not use the numeric retention category. The most recent data (as of March 31, 1987) are being compiled and analyzed by Air Force Logistics Command. The data are due to the Air Staff by January 4, 1988. We will provide the information to your staff in January.

You asked several specific questions regarding the growth in long supply aircraft spare parts. An explanation of the spares computation and a definition of long supply are required prior to providing the answers to your questions.

Aircraft spares requirements are not contractor initiated. The spares computation begins with past usage and flying hours. Failure rates are developed and applied against future flying hours to forecast demands on the supply system. The computation considers asset gains from reclamation (repair) and delivery of items on order, and then reduces asset balances for projected wearouts. The computation assumes full funding of depot purchased equipment maintenance (DPEM) and that any shortages are first satisfied by repair. Most aircraft spares items do not generate buy requirements each year.

AFAO (a DOD term for "approved force acquisition objective") includes war reserves and peacetime stocks to support budget year requirements. These budget year requirements are defined as forecast demands and condemnations/wearouts for two years of peacetime operations with built in procurement leadtime added on. AFAO also includes budget year war readiness requirements. It excludes known war readiness requirements beyond the budget year. All spares inventory exceeding the AFAO requirement is categorized as long supply. This is an important point - our current practice is somewhat misleading S. Lem

There are five primary reasons for the long supply assets depicted on the attached charts.

a. Program and end item changes. Most of the on hand, long supply assets were procured for older aircraft years ago. As flying hours and aircraft population decreased, our computation compensated by buying and repairing less spares. However, the assets on hand to support initial and subsequent peak operating periods remain in the system. As the older B-52, F-4, and C-130 aircraft phased out, the assets were repaired to support the flying hour program. Unless condemnations or wearouts occurred, the spares remain in the inventory. Any reductions by the Air Force or Congress in the FY88 and FY89 flying hour program automatically reduce the AFAO requirement and increase the long supply inventory.

b. Modifications. The Air Force invests annually to replace less reliable systems/items in it's aircraft inventory. Aircraft modifications are an essential method of increasing readiness by improving reliability and maintainability. Other modifications add new capability. Again, the computations compensate by buying and repairing less to support the old system. However, any remaining spares on hand for the old system will become "long supply". In addition, the previously installed items now become part of the spares inventory and will become long supply.

c. Errors. As depicted by the difference in the amounts on the attached charts, significant errors can occur. One item at San Antonio Air Logistics Center had a $3.3 billion overstatement of on hand long supply assets. The item is a starter for the H-1 and H-3 helicopters. The item is actually managed by the Navy. The Air Force is a user and must pass requirements to the Navy for procurement. The unit cost is $3,280. Due to a human error the on hand asset balance was reported as 1,000,045. The correct number was 45.

d. Retention. The Air Force has established an eighteen year retention policy for on hand assets. In other words, any assets exceeding eighteen years of demands and wearouts are considered potential DOD excess or contingency retention. Air Force item managers must review all items in the potential excess category before any disposal action is taken. The Air Force has decided that all spares applicable to active aircraft will be retained. This decision was based on Air Force Inspector General and GAO

reports in 1984. These reports made several recommendations to preclude premature disposal and subsequent reprocurement. The retention of these items increases the value of long supply inventory.

e. On order excess time frame. The Air Force has established a different criteria for excess on order. All spares on order that exceed the AFAO requirements must be reviewed to determine if the contracts should be terminated. However, annual buy requirements are based on forecast peacetime demands/condemnations 3-4 years into the future and budget year war requirements. When variations in demand patterns occur, items could be placed on order, terminated, and put on order again. Item managers must consider other factors (e.g., item history, planned requirements, contractor charges) external to the computation before deciding to terminate contracts. The Air Force will redefine those long supply items which are on order and not to be terminated, as "economic retention" in the future.

As stated earlier, the Air Staff does not have the long supply values for the one-year period ending March 31, 1987. The report to DOD is being compiled and analyzed by Air Force Logistics Command. It should be available in early January 1988. We anticipate the long supply value to decrease. However, the AFAO value will also decrease because of a reduction in the safety level and factors for war readiness material. These reductions were policy decisions that were made after the spares were on order. The item managers were instructed to cancel all orders whenever economical to do so and there were no known future requirements.

We met with Mr. Steve Ryan and Mr. Carl Bogar of the Committee staff on November 30, 1987 to discuss your request for information on items with on order excess as of Marsh 31, 1986. The data requested were voluminous and would require months to obtain. It was agreed to identify the ten largest contracts. The list would show the contractors, the amount of the contract, a general description of the spares purchased, and the reasons for not canceling the contracts. The Air Staff will provide these data to your staff by December 18, 1987.

There are a number of Air Force initiatives to reduce long supply inventory.

a. The Air Force is aggressively trying to sell selected long supply stocks to our allies. This inventory includes spares that are not applicable to Air Force aircraft. This initiative will not only provide better support to our foreign customers, it will also reduce storage requirements.

b. The Air Force is also in the early implementation of a computer managed inventory system called Requirements Data Bank (RDB). Two essential capabilities of the RDB are restratification of inventories and files maintenance edits. Currently, errors

that are not corrected during field maintenance are included in the summary data and the DOD inventory reports. The Air Force has established management review levels on all buy, repair, termination and disposal actions to ensure errors do not result in bad decisions. Analysis of the summary data has been difficult because of time to reconcile errors, as experienced on the H-1 and H-3 starter. Beginning in February 1988, the Air Force can restratify it's inventory summaries. Later in the RDB development, edits will be included in the computation system to detect files maintenance errors and preclude their input. Today, the function is a manual quality control check over hundreds of thousands of transactions each quarter.

c. As a result of recommendations made in a March 1987 GAO draft report, the Air Force is implementing procedural changes for processing termination actions. The changes include the development of an economic model to assist item managers in making termination decisions. The planned changes should improve the analysis/evaluation of the Air Force's on order excess items.

Several policy changes are being studied to provide equal or better spares support with the same or less cost. These policy changes may reduce overall spares requirements and the AFAO calculated long supply value. These changes will be reflected in future DOD reports. It has been difficult to quantify the impact of previous changes because we do not have the ability to simulate restratifiction of our inventories.

We do not plan to significantly change our disposal policy. Our experience has shown that it is more prudent in the long run to pay the one or two percent storage costs. Some items in our inventory are critical and could not be replaced without significant price increases. Some items could not be replaced at any cost because the manufacturers no longer exit. The ordering costs can not be measured.

The Air Force has designated Allen Beckett, of our Supply Policy Division, to work with your staff. He can be reached at 694-3548. We will continue to work with you so you can better understand our long supply inventory.

Sincerely,

LLOYD R. MOSEMANN, II
Deputy Assistant Secretary
(Logistics)

Attachments

DEPARTMENT OF THE AIR FORCE
WASHINGTON, D.C. 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

DEC 28 1987

The Honorable John Glenn
Chairman
Committee on Governmental Affairs
United States Senate
Washington, D.C. 20510

Dear Chairman Glenn:

This is a follow-on response to your November 2, 1987 letter to the Secretary of the Air Force. Our initial response was provided in my December 15, 1987 letter. As stated in our earlier response, we met with Mr. Steve Ryan and Mr. Carl Bogar of the Committee staff on November 30, 1987. We discussed your request for information on items with on order excess as of March 31, 1986. The data requested for all items were voluminous and would require months to obtain. It was agreed to identify the ten largest contracts, describe the situation on each, and provide the reasons why the contracts were not terminated. The data are provided at Attachment 1. All of the items shown were categorized as potential excess.

In all ten examples, the spares orders were not terminated. The aircraft and systems being supported will be in the active inventory for many years. The spares will be needed. The appropriate category for these examples, after analyses by the item managers, should have been economic retention. As stated in our December 15, 1987 response, our computer systems cannot restratify our inventory reports to show these changes.

In your November 2, 1987 letter to the Secretary you also asked for the most recent inventory report. The March 31, 1987 data for both on hand and on order inventories are being analyzed by Air Force Logistics Command. The Air Staff has asked for a thorough review of the data and an analysis of any significant changes from the March 31, 1986 report. The data are due to the Air Staff by January 3, 1988. We will provide the information to your staff in January.

Sincerely,

LLOYD K. MOSEMANN, II
Deputy Assistant Secretary
(Logistics)

Attachment

ON ORDER EXCESS - TOP TEN - 31 MARCH 1986

CONTRACTOR	AMOUNT	DESCRIPTION	NARRATIVE
Westing-house	$21.5M	Beam steering control for B-1B aircraft	Contract was not terminated. These were initial spares bought under the Spares Acquisition Integrated with Production (SAIP) technique. Items are scheduled for delivery by Nov 88.
Pratt and Whitney	$14.7M	Compressor rotor for C-141 and E-3 aircraft engines	Contract was is in the process of being delivered when termination was computed. Termination considered uneconomical. Five each remain on contract at this time.
Bendix Corp	$14.4M	Unified fuel control (UFC) for F-16 aircraft	The F-15 UFC was in a buy when this F-16 item was in termination. The contract was modified to change the part number to the F-15 UFC. All assets have been delivered and the F-16 computation is in optimum position.
Norden Systems Inc	$11.2M	Receiver/transmitter modulator for the B-52 offensive avionics system	Termination was accomplished for $3.3. The remainder of the items on contract were needed to support an aircraft modification program. Additionally, termination charges were estimated at 85-90% of the cost of the contract.
Eaton AIL	$9.9M	Amplifier for B-1B aircraft electronic counter measures systems	Contract was not terminated. This is a new item for a new system and aircraft. B-1B spares buys for these systems were for four years worth of requirements under the Expanded Advance Buy (EAB) concept whereby production lots are combined to achieve an economical buy on initial and replenishment requirements.

Fairchild Industries Inc.	$7.5M	Stabilator for F-4E/G aircraft	Decision not to terminate based on history of skin patch modifications to cope with stress crack. At least 600 stabilators in the system are old enough to be highly susceptible to metal fatigue and stress cracks. The contratt was scheduled to begin delivery in Sep 86. Also, there was an approximate 30% cost savings on this buy due to volume buying. Delivery of the contract is now complete.
CFM International	$6.0M	Rotor shaft assembly for KC-135R aircraft	Contractor started delivery in Mar 86. Termination costs would have been excessive. Management decision not to terminate was also based on the fact that this is a new item in the Air Force inventory and applicapable to a weapon system that has an active projected future program. As of Dec 87, 17 each remain on order.
CFM International	$5.7M	Fan and booster rotor for F-108 engine, KC-135R aircraft	It was determined to be uneconomical to terminate as delivery had already started. It was also agreed that the factors used (based on commercial data) were not realistic. The contract was shipped complete in Feb 87. The item is computing a buy for 50 each as of the 30 Jun 87 computation.
CFM International	$5.2M	Stator assembly used on F-108 engine, KC-135R aircraft	Contract was not terminated because it was considered uneconomical. Delivery was scheduled to begin in Jul 86. This is a new item in the Air Force inventory and factors used in computing requirements were only estimates. The weapon system has an active projected future. Contract delivery is scheduled to be complete in Dec 87.
Raytheon	$5.3M	Radar transmitter used on F-4C aircraft	An attempt was made to terminate this contract but it was determined to be uneconomical. As of Dec 87, contract delivery is complete.

Total $101.4 M

AIRCRAFT SPARES

	FY 85		FY 86	
	$ B	%	$ B	%
AFAO	18.3	73	17.5	61
CONTINGENCY RETENTION	3.7	15	7.2	25
ECONOMIC RETENTION	2.0	8	3.1	11
POTENTIAL EXCESS	1.1	4	1.0	3
TOTAL	25.1	100	28.8	100

NOTE: THE DOD REPORT INCLUDES ON HAND SPARES ONLY.

SOURCE: RCS: DD-M(A) 1000 REPORT

AIRCRAFT SPARES (CORRECTED)

	FY 85		FY 86	
	$ B	%	$ B	%
AFAO	18.3	81	17.5	75
CONTINGENCY RETENTION	2.0	9	2.7	12
ECONOMIC RETENTION	2.0	9	3.1	13
POTENTIAL EXCESS	.2	1	.1	
TOTAL	22.5	100	23.4	100

NOTE: INCLUDES ON HAND SPARES ONLY

AIRCRAFT SPARES ON ORDER

	FY 85		FY 86	
	$ B	%	$B	%
AFRO	6.7	96	6.8	89
CONTINGENCY RETENTION	.1	1	.2	3
ECONOMIC RETENTION	0	0	0	0
POTENTIAL EXCESS	.2	3	.6	8
TOTAL	7.0	100	7.6	100

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United States Senate
COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

July 10, 1987

The Honorable John O. Marsh, Jr.
The Secretary of the Army
The Pentagon, Room 3E718
Washington, D.C. 20310

Dear Mr. Secretary:

As Chairman of the Governmental Affairs Committee, I am conducting an in-depth review of what appears to be serious problems in DOD's inventory management practices. In September we expect to hold a series of hearings on this subject. In the opening hearing of this series, the Secretary of Defense, or his representative, will present DOD's position on the issue of inventory accuracy and causative research. In this regard, I would appreciate your assistance in looking into a potential problem of inventory control over Stinger missiles, which may be symptomatic of a larger problem in safeguarding serial number controlled munitions.

Information provided by the General Accounting Office indicates that in 1986, the Army Missile Command asked the 200th Theater Army Material Command in Europe to return 24 Stinger missiles for test firing. Missiles are controlled by serial number, and the 24 were requested by specific serial number. The Center was able to locate 10 of the missiles through its inventory records. In September 1986 the Center asked Army Divisions in Europe to locate the remaining 14. As of June 1987, only 7 were located, and the remaining 7 were still not accounted for. The Missile Command claims the problem is one of erroneously recording missile serial numbers, and states they do have the correct total quantity on hand. The GAO is continuing its review of this matter.

I would appreciate a prompt response explaining the circumstances surrounding this matter. For instance:

(1) Is the information presented above correct? In particular, is it correct that the problem is one of erroneously recording serial numbers or are some missiles possibly missing?

(2) What caused the problem, and what is being done to correct it?

(3) Is this a problem unique to Stingers, or is it a widespread problem in controlling missiles and other serial number controlled munitions?

I look forward to hearing from you on this matter and to working with you concerning this important management problem. If you have any questions regarding this request, please contact Stephen Ryan, Committee Counsel, or Carl Bogar, staff member, on 224-4751.

Sincerely,

John Glenn
Chairman

JHG/mkh

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310-0103

13 August 1987

Honorable John Glenn
Chairman
Committee on Governmental Affairs
United States Senate
Washington, D. C. 20510-6250

Dear Mr. Chairman:

This is in reply to your letter to Secretary Marsh concerning Department of Defense inventory management practices and the control of Stinger Air Defense Missiles by serial number.

In response to the specific questions you asked, the following answers are provided:

- The information regarding the failure to pinpoint specific serial numbered missiles is correct. However, that does not indicate that the U. S. Army has lost accountability. To verify this position, U. S. Army Europe is now conducting a special 100 percent physical inventory of all Stinger missiles in that command. The results of that inventory will be forwarded to your office.

- Current procedures are to report the location of small missiles, such as Stinger, by production lot number, not serial number. The problem of not being able to locate specific missiles was caused by having to manually search over sixty locations for specific serial numbers in a system recorded by lot number. Because of the sensitive nature of small air defense missiles, the Army is initiating actions to begin tracking small missiles by serial number using the DOD Small Arms Serialization Program.

- This situation is not unique to the Stinger Missile System. As indicated, the problem is retrieving specific serial numbers in a management system oriented towards lot numbers. Production lot numbers have traditionally been used to ensure stockpile reliability and safety. When a problem is noted which impacts or questions the safety of use of any ammunition item, that entire production lot is temporarily suspended from issue and use until an investigation is completed. The lot numbering system enables the field ammunition supply system to safely control and manage the inventory.

Ammunition and explosives accountability at the unit level is excellent and reflects appropriate safeguards for highly sensitive assets such as Stinger missiles. In a special inspection of arms, ammunition and explosives accountability conducted by the Department of the Army Inspector General during February through May 1987, the procedures for accountability and safeguarding sensitive munitions were verified.

We feel that accountability of our sensitive assets is more than adequate. However, there is always room for improvement in ammunition management programs. I trust this has been responsive to your questions and look forward to working with you in the future on the extremely important issue of arms, ammunition, and explosives accountability and control.

Sincerely,

Eric A. Orsini
Deputy Assistant Secretary of the Army
(Logistics)
OASA(I&L)

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United States Senate
COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

September 9, 1987

The Honorable John O. Marsh, Jr.
The Secretary of the Army
The Pentagon, Room 3E718
Washington, D. C. 20310

Dear Mr. Secretary:

I have the initial response to my inquiry from Mr. Orsini, dated August 13, 1987, concerning the control of Stinger Air Defense Missiles. However, the response raises several new questions. I would appreciate some additional information concerning the inventory practices for these missiles.

(1) Why did the Army test range ask for Stingers by serial number when they are not controlled that way? Please append and comment upon the appropriate Army regulations or procedures in effect at the time of the recall request which specified that missiles, such as the Stinger, were to be controlled by lot number rather than by serial number. Please annotate the relevant parts of those regulations.

(2) How many Stinger missiles are in a production lot? Are those lots broken up and dispersed to many locations? If so, how is accountability achieved if serial numbers are not recorded?

(3) Your letter stated that an inventory is being conducted to ensure that we have all the Stinger missiles. Describe how the inventory is being conducted. Are the missiles in question from one lot or from several lots? When will that inventory be completed, and if it has been completed, what are the results?

(4) In your response, it was stated that the Army is initiating actions to begin tracking small missiles by serial number using the DOD Small Arms Serialization Program. When was this action begun, and when will it be completed? Please describe the manner in which Stinger missiles will be controlled under this program.

I appreciate your cooperation and look forward to hearing from you on this matter. If you have any questions regarding this request, please contact Stephen Ryan, Committee Counsel, or Carl Bogar on 224-4751.

Sincerely,

John Glenn

John Glenn
Chairman

JHG/cfb

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310-0103

10 September 1987

Honorable John Glenn
Chairman
Committee on Governmental Affairs
United States Senate
Washington, D. C. 20510-6250

Dear Mr. Chairman:

This is the final reply to your request of July 10, 1987, concerning DOD's inventory management practices and the control of Stinger Air Defense Missiles by serial number.

As I stated in my earlier letter, I would provide you with the results of the USAREUR-wide 100% physical inventory of Stinger missiles. I am pleased to report to you that USAREUR has completed their inventory and was able to verify that the command does in fact have 100% of their Stinger missiles. The Army has located all the missiles MICOM had requested by serial number.

Furthermore, USAREUR has initiated actions to ensure the serial number, as well as lot number, of each missile is placed on the appropriate records.

We are looking forward to working with you in the future on the extremely important issue of arms, ammunition, and explosives accountability and control.

Sincerely,

Eric A. Orsini
Deputy Assistant Secretary of the Army
(Logistics)
OASA(I&L)

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310-0103

8 October 1987

Honorable John Glenn
Chairman
Committee on Governmental Affairs
United States Senate
Washington, D. C. 20510-6250

Dear Mr. Chairman:

This is in reply to your questions of September 9, 1987, concerning the United States Army's practices for the control of Stinger Air Defense Missiles.

QUESTION (1)

a. "Why did the Army test range ask for Stingers by serial number when they are not controlled that way?"

Reply: The office that requested the missiles was technically oriented and not familiar with retail logistics operations. Future requests for missiles will contain both lot numbers and serial numbers of the missiles to be tested.

b. "Please append and comment upon the appropriate Army regulations or procedures in effect at the time of the recall request which specified that missiles, such as the Stinger, were to be controlled by lot number rather than by serial number."

Reply: In my letter of August 13, 1987, I stated, "Current procedures are to report the location of small missiles, such as Stinger, by production lot number, not serial number." (Enclosure 1) However, for accountability, unit property books are required to reflect both the lot number and serial number of a Stinger missile. (Enclosure 2) The property book record listing item serial numbers and lot numbers is not reported up and down the chain of command. A Stinger missile is ammunition. (Enclosure 3) Some units were confused about inventory requirements because the regulation was poorly written. Enclosure 4 shows the requirement to inventory ammunition by lot number. Enclosure 5 shows the requirement to verify serial numbers and lot numbers during an inventory. The wording has been corrected in a revision of AR 710-2 to be published December 1, 1987, as shown in enclosure 6.

c. "Please annotate the relevant parts of those regulations."

Reply: Key phrases are highlighted in yellow and side barred.

QUESTION (2)

a. "How many Stinger missiles are in a production lot?"

Reply: The quantity of Stinger missiles in a single production lot has been as high as 348 missiles. Many components in the Stinger missile have lot numbers. The production lot number changes each time a component lot number changes. This change causes the variation in quantities of missiles in a production lot.

b. "Are those lots broken up and dispersed to many locations?"

Reply: Yes. Currently there are over sixty (60) storage locations for Stinger missiles in USAREUR alone.

c. "If so, how is accountability achieved if serial numbers are not recorded?"

Reply: Accountability is achieved by using quantity rather than serial number. The quantity accountability procedure assures that items are not lost when properly applied. This was clearly demonstrated when units in USAREUR verified they had the quantities of Stinger missiles they were supposed to have. This was specifically stated in the draft GAO report.

QUESTION (3) "Your letter stated that an inventory is being conducted to ensure that we have all the Stinger missiles."

a. "Describe how the inventory is being conducted."

Reply: Each unit with Stinger missiles in its possession detailed personnel to go to the actual missile storage locations. Each missile container was physically looked at, the quantities, lot numbers, and serial numbers were verified.

b. "Are the missiles in question from one lot or from several lots?"

Reply: More than one lot of Stinger missiles was involved at each storage site.

c. "When will that inventory be completed, and if it has been completed, what are the results?"

Reply: The inventory was completed in August 1987. USAREUR was able to verify that the command does have 100% of their Stinger missiles.

QUESTION (4) "In your response, it was stated that the Army is initiating actions to begin tracking small missiles by serial number using the DOD Small Arms Serialization Program."

a. "When was this action begun, and when will it be completed?"

Reply: The Army began planning to place Category One non-nuclear missiles into the DOD Small Arms Serialization Program (DODSASP) in January 1987. United States Army Materiel Command is developing an implementation plan which is scheduled for completion on October 15, 1987. Subsequent to this date we will provide an implementation completion date.

b. "Please describe the manner in which Stinger missiles will be controlled under this program."

Reply: Accountability will be maintained using Property Book procedures by lot number and serial number of the Stinger missile. Placement of Category One non-nuclear missiles into DODSASP will provide centralized visibility, not accountability, of missile ownership, shipments, missile firings, and demilitarization actions.

We are looking forward to working with you in the future on the extremely important issue of arms, ammunition, and explosives accountability and control.

Sincerely,

Eric A. Orsini
Deputy Assistant Secretary of the Army
(Logistics)
OASA(I&L)

Enclosures

*DEDICATED TO *
*EXCELLENCE IN *
COMMUNICATIONS

UNCLASSIFIED

PENTAGON
OPERATIONS DIRECTORATE

****
* THE CONSTITUTION *
****

PRIORITY ZYUW RUEADWD7540 2251434
P 31430Z AUG 87
FM DA WASHINGTON DC //DALO-SMZ-A//
TO CDR AMC ALEXANDRIA VA//AMCSM//
INFO CDRMICOM REDSTONE ARS AL //AMSMI-S//
CDRAMCCOM ROCK ISLAND IL //AMSMC-DS//

UNCLAS
QQQQ
SUBJECT: TRACKING OF CATEGORY ONE NON-NUCLEAR MISSILES IN DOD SMALL ARMS SERIALIZATION PROGRAM
1. CATEGORY ONE NON-NUCLEAR MISSILES ARE MAN-PORTABLE, HIGHLY LETHAL WEAPONS THAT MUST BE SAFEGUARDED FROM DIVERSION. RECENT EVENTS HAVE IDENTIFIED A WEAKNESS IN THE ACCOUNTABILITY AND CONTROL OF THESE SYSTEMS. THE DECISION HAS BEEN MADE TO INCORPORATE CATEGORY ONE MISSILES INTO THE DOD SMALL ARMS SERIALIZATION PROGRAM (DODSASP).
2. REQUEST AMC INITIATE THE FOLLOWING ACTIONS:
A. DEVELOP REALISTIC MILESTONES FOR ALL REQUIRED ACTIONS TO REGISTER CATEGORY ONE NON-NUCLEAR MISSILES IN DODSASP. MILESTONES ARE REQUIRED BY 4 SEPTEMBER 1987.
B. PROVIDE RECOMMENDED POLICY CHANGES TO AR 710-3, AR 710-9, DODI 4140.52, DOD 5100.76-M AND DOD 4500.32-R. COMPLETION DATE FOR THIS ACTION SHOULD BE INCLUDED IN MILESTONE SCHEDULE.
3. THIS HEADQUARTERS WILL PERFORM THE REQUIRED COORDINATION WITH OSD TO IMPLEMENT DOD WIDE. MY STAFF IS AVAILABLE TO PROVIDE ASSISTANCE AS NEEDED TO COMPLETE THIS EFFORT.
4. MY DALSO FOR THIS ACTION IS MR. P.T. FUHRMAN, COML 697-6355.
BT

********** TAKE PRIDE IN AMERICA **********

ACTION DALO(6) (F)
INFO SCB REVIEW(1)

MCN=87225/18981 TOR=87225/14342 TAD=87225/14522 CDSN=NAD454
PAGE 1 OF 1
1314307 AUG 87

UNCLASSIFIED

*EXCELLENCE IN * *COMMUNICATIONS*

UNCLASSIFIED

* THE CONSTITUTION *

PENTAGON
OPERATIONS DIRECTORATE

PRIORITY ZYUW RUEADWD9119 2452116
" 22035Z SEP 87
. DA WASHINGTON DC //DALO-SMZ-A//
.O AIG 9892

Good message!
J. Ryan

UNCLAS
MG MURRAY SENDS
QQQQ
SUBJECT: SERIAL NUMBER ACCOUNTABILITY FOR AMMUNITION AND EXPLOSIVES
A. AR 710-2, SUPPLY POLICY BELOW WHOLESALE LEVEL, UNIT SUPPLY NUMBER TEN, 24 NOVEMBER 1986
1. THE PURPOSE OF THIS MESSAGE IS TO ALERT YOU OF A FORTHCOMING CHANGE TO AR 710-2 TO BECOME EFFECTIVE NOVEMBER 1987 PERTAINING TO THE INVENTORY AND ACCOUNTABILITY OF AMMUNITION AND EXPLOSIVES. THE POLICY WILL ESTABLISH THE REQUIREMENT TO INVENTORY AND ACCOUNT FOR THESE SENSITIVE ITEMS BY SERIAL NUMBER. THE HEIGHTENED THREAT OF TERRORIST ACTIVITIES ALONG WITH THOSE OF POLITICAL EXTREMIST ORGANIZATIONS REQUIRE AN INCREASED LEVEL OF ACCOUNTABILITY AND CONTROL. THE POTENTIAL FOR LOSS OR THEFT, AND SUBSEQUENT USE IN CIVIL DISTURBANCES OR AGAINST MILITARY TARGETS MUST BE AVOIDED.
2. THIS CHANGE WILL CONSOLIDATE UNIT LEVEL INVENTORY REQUIREMENTS IN A TABLE IN CHAPTER TWO. THIS TABLE STATES THAT AT THE UNIT LEVEL AMMUNITION AND EXPLOSIVE ITEMS WILL BE INVENTORIED BY QUANTITY, LOT NUMBER AND SERIAL NUMBER ON A MONTHLY BASIS. ADDITIONALLY, SERIAL NUMBER ACCOUNTABILITY IS REQUIRED ON THE PROPERTY BOOK FOR ALL ITEMS WITH A CONTROLLED INVENTORY ITEM CODE .CIIC' CFORMERLY SEC' OTHER THAN "U" OR BLANK.
. THE INVENTORY REQUIREMENTS AT THE AMMUNITION SUPPLY POINTS AND RESTOCKAGE POINTS READ IN PART... AMMUNITION WILL BE INVENTORIED BY TYPE, QUANTITY, LOT NUMBER AND SERIAL NUMBER ON A MONTHLY BASIS. AMMUNITION AND EXPLOSIVE ITEMS RIGGED OR PRECONFIGURED FOR RAPID DPLOYMENT WILL BE INVENTORIED MONTHLY. IF THERE ARE INDICATIONS THAT LOADS HAVE BEEN TAMPERED WITH, LOADS WILL BE INVENTORIED IMMEDIATELY.

4. I SOLICIT YOUR SUPPORT IN ASSURING MAXIMUM CONTROL FOR THESE CRITICAL ASSETS. BT

quarterly

********** TAKE PRIDE IN AMERICA **********

ACTION DALO(6)
INFO SCB REVIEW(1) (A,F)

MCN=87245/31656 TOR=87245/2116Z TAD=87245/2256Z COSN=MAD685
PAGE 1 OF 1
UNCLASSIFIED 022035Z SEP 87

DEPARTMENT OF THE NAVY
NAVY SHIPS PARTS CONTROL CENTER
5450 CARLISLE PIKE
P.O. BOX 2020
MECHANICSBURG, PA. 17055

4 June 1985

Space Microwave Lab, Inc.
1255 N. Dutton Ave.
Santa Rose, CA 95401
Attn: Bill Konvalinka

Dear Sir:

I am asking for your personal attention and assistance in resolving a major problem that we have at Navy Ships Parts Control Center (SPCC). Our records indicate that you have a Repair Basic Ordering Agreement (BOA) with SPCC. Your volume of repair action may or may not be large; but, in either case, we have a problem in that our computer files have no visibility of our repairable components in your facility. Due to this lack of information, we have great difficulty in making accurate supply decisions as to when and how much to buy or repair.

I am proposing a very simple solution to this problem. I have established a group of people who will call your company on a weekly/monthly basis and ask for information concerning movement of our repairable components. Your people are required to keep records on this anyway. Our operators will simply enter this information into the computer. The attached reporting requirements statement provides an outline of the information we at SPCC require from you.

What I would like for you to do is to direct the appropriate person/persons in your organization to contact the following people for additional directions/information: Mrs. Jan Heberlig, (717) 790-7598; Mrs. Nan Boger, (717) 790-7657.

Your cooperation in this matter is greatly appreciated.

Sincerely,

M. L. JENKINS
Director,
Repairables Policy
and Systems Office

JOHN GLENN, OHIO, CHAIRMAN
LAWTON CHILES, FLORIDA
SAM NUNN, GEORGIA
CARL LEVIN, MICHIGAN
JIM SASSER, TENNESSEE
DAVID PRYOR, ARKANSAS
GEORGE J. MITCHELL, MAINE
JEFF BINGAMAN, NEW MEXICO
WILLIAM V. ROTH, JR., DELAWARE
TED STEVENS, ALASKA
WILLIAM S. COHEN, MAINE
WARREN B. RUDMAN, NEW HAMPSHIRE
JOHN HEINZ, PENNSYLVANIA
PAUL S. TRIBLE, JR., VIRGINIA
LEONARD WEISS, STAFF DIRECTOR
JO ANNE BARNHART, MINORITY STAFF DIRECTOR

United States Senate
COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

June 17, 1987

The Honorable James H. Webb, Jr.
Secretary of the Navy
Navy Department
Washington, D. C. 20350-1000

Dear Mr. Secretary:

The General Accounting Office testified before this Committee in February 1987 and advised us of potentially significant supply management problems at all levels within the Defense Department. As Chairman of the Governmental Affairs Committee, I am writing to seek your assistance in an area of great concern to me - the accuracy and reliability of the Navy's inventory control system.

In this regard, it has been brought to my attention that the Navy has a potentially serious problem in accounting for and controlling items which are sent for repair to commercial contractors' plants and other military services' repair centers. Apparently, these items are not adequately tracked by the inventory system. For example, based on documentary evidence obtained by my staff, it appears that in 1985 the Ships Parts Control Center (SPCC) admitted in letters sent to contractors and other military repair centers that it had no accountability or control ("visibility") over the SPCC repairable items in these non-navy facilities. The SPCC, in effect, asked the contractors and other military services to provide them with the necessary information as to what Navy owned items were at their facilities for repair. As a result of the information received, SPCC adjusted its financial records by $620 million and suffered a net loss of $464 million, with no assurance that such adjustments were accurate. If this information is correct, Navy centers such as the SPCC would appear particularly vulnerable to fraud, waste, and abuse.

As to the facts and circumstances surrounding the SPCC, I respectfully request that the Committee be advised as to the nature and outcome of any investigation by the Navy to

determine the reasons for the $464 million loss which resulted; the likely effect of this large write-off; and the corrective actions taken by SPCC to avoid a repeat of this situation.

Also, I respectfully request that the Navy review this matter and advise the Committee as to whether the SPCC case is indicative of systemic problems in inventory accounting and control. I would appreciate it if the Navy's response would indicate why these inventory problems have occurred; what has been done to correct these problems; and what remains to be accomplished.

I have designated Committee Counsel Stephen Ryan (224-4751) and staff member Carl Bogar (224-1556) to coordinate my inquiry in this area. I look forward to your response. It is possible that the Committee will schedule hearings concerning DOD inventory control and accounting procedures in general, and the SPCC, in particular.

Sincerely,

John Glenn

John Glenn
Chairman

JG:set

JOHN GLENN, OHIO, CHAIRMAN
LAWTON CHILES, FLORIDA
SAM NUNN, GEORGIA
CARL LEVIN, MICHIGAN
JIM SASSER, TENNESSEE
*DAVID PRYOR, ARKANSAS
*BRUCE J. MITCHELL, MAINE
P. BINGAMAN, NEW MEXICO
WILLIAM V. ROTH, JR., DELAWARE
TED STEVENS, ALASKA
WILLIAM S. COHEN, MAINE
WARREN B. RUDMAN, NEW HAMPSHIRE
JOHN HEINZ, PENNSYLVANIA
PAUL S. TRIBLE, JR., VIRGINIA
LEONARD WEISS, STAFF DIRECTOR
JO ANNE SARGENT, MINORITY STAFF DIRECTOR

United States Senate
COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

November 9, 1987

The Honorable James H. Webb, Jr.
Secretary of the Navy
Navy Department
Washington, D.C. 20350-1000

Dear Mr. Secretary:

As Chairman of the Governmental Affairs Committee, I am conducting an in-depth review of what appears to be serious problems in DOD's inventory management practices. On October 27, 1987, we held our first hearing on this issue. In that hearing, I raised questions to Deputy Secretary of Defense Taft about aspects of the Ships Parts Control Center's (SPCC) control over the SPCC repairable items in non-Navy facilities. I have corresponded with you on this matter, and I continue to be troubled about it. I would appreciate some additional information.

I continue to be concerned that the $464 million write-off that occurred in 1986 was taken inappropriately. Further, I am concerned that the problem will continue. On October 27, 1987, Comptroller General Bowsher submitted information for the hearing record which states:

> "Our current work in the Navy has shown that recently the SPCC again lost visibility over more than $200 million in repairable items at the contractors previously queried, and intends to send another inquiry to the contractors. This situation obviously requires immediate management attention."

The Comptroller General also stated that in 1985 and 1986, the SPCC wrote this $464 million off its financial records, without attempting to research the validity of the contractor-reported data.

This situation requires immediate management attention. We have been told in correspondence with Admiral Whittaker and other Navy personnel that the $464 million adjustment does not represent a physical loss and that the contractors are responsible for keeping the official Navy inventory

records on the repairable items in question. First, please advise me if this represents the Navy's position on this issue. Further, it would be helpful if the Navy would explain how it can be confident regarding this claim when no attempt was made to research the contractor reported data.

Second, is it true that the Navy is going to repeat the process used in 1985 and 1986 to ask the contractors what Navy inventory they have at their facilities?

Third, I would appreciate a listing of the contractors, the dollar amount of the Navy material the contractors stated they had on hand, and the dollar amount of the Navy material SPCC indicated the contractors had in their possession, which led to the $464 million adjustment. It would be helpful if this information were listed in a manner which will clearly indicate those contractors whose records dramatically differ from Navy estimates.

Fourth, it would be helpful to know if any of the contractors identified in response to the foregoing paragraph were selling new parts, identical to the ones they were repairing, at the time the $464 million write-off occurred. If there are instances of this, please provide the specifics on what was being sold and the volume of the sales.

Fifth, should the Federal Acquisition Regulations governing these activities be changed to require the government to maintain the official accounting records?

Finally, your staff has advised me that the corrections necessary for the Navy to better control its inventories will be in place by 1990. Can we afford to wait that long?

I have designated Committee Counsel Stephen Ryan and staff member Carl Bogar to coordinate my inquiry in this area. They can be reached on 224-4751. I look forward to your prompt response and to working with you to reduce our inventory management problems.

Sincerely,

John Glenn
Chairman

JHG/cb

DEPARTMENT OF THE NAVY
NAVAL SUPPLY SYSTEMS COMMAND
WASHINGTON, D.C. 20376-5000

TELEPHONE NUMBER
COMMERCIAL
AUTOVON
IN REPLY REFER TO:

SEP 18 1987

Mr. Stephen M. Ryan
Counsel
Senate Committee on Governmental Affairs
340 Dirksen Senate Office Building
Washington, D.C. 20510-6250

Dear Mr. Ryan:

I appreciated the opportunity to brief you on the Ships Parts Control Center (SPCC) financial adjustment addressed in Senator Glenn's letter. Enclosed is a summary of the brief's key points, a copy of the brief, and a backup narrative for each chart. As requested, I have also included copies of my previous Congressional testimony concerning the Navy supply system.

Using the format of Senator Glenn's letter, the following paragraphs address the key concerns:

(1) Reasons for the $464M loss which resulted....Why did these problems occur?

The basic issue is that there was no $464M loss. The bottom line summary of both the brief and this letter is that the Navy's known problems have been associated with properly processing a large volume of transactions through an outmoded system to physically track and financially reflect assets being repaired at commercial activities. We implemented a Commercial Asset Visibility (CAV) system in FY 85, designed to reduce our reliance on paper and to increase the visibility of and accountability for repairables. We took a net financial adjustment of $464 million to correct internal financial records at that time. Based on the throughput of almost $12 billion of commercial contractor repairs, this represented less than four percent of total transactions over the past fifteen years.

(2) The likely effect of this large writeoff.

The effect of this adjustment is to bring our financial control files into balance. The adjustments were financial adjustments which do not represent material losses. There was no effect on material ordered or repaired due to this correction of the financial files.

Physical accountability of the material at commercial contractor facilities has recently been reviewed by both the Naval Audit Service and the Defense Logistics Agency. Initial indications confirm there is not a physical accountability problem. The physical accountability function is the

responsibility of the commercial contractors, with government oversight being provided by the Defense Contracting and Administrative Services (DCAS) activities of DLA.

(3) Corrective actions taken by SPCC to avoid a repeat of this situation... What's been done?

CAV I is part of a continuum of improvements to manage the commercial repair process:

A. PRE-CAV...The material was (and still is) the responsibility of the contractor, in accordance with Federal Acquisition Regulations (FAR), with government monitoring performed by the Defense Contract Administrative Services (DCAS) offices. There was no automated visibility at SPCC of material at contractors' plants. Thus SPCC had to employ time-consuming, off-line techniques to support its item repair/replenishment decisions.

B. CAV I...Implemented in 1985, it was designed to improve inventory management by SPCC. CAV I provided better visibility of the material at contractor sites. As part of the CAV I effort, the inventory files and financial ledgers at SPCC were balanced (the $464M adjustment).

C. CAV II...Scheduled for implementation in November 87, it will further enhance the current system by tracking each carcass by document number through the repair process at the contractor's plant and will improve the process of automatically updating SPCC financial files.

D. Resystemization...The final step to provide the level of accountability and control necessary is moving to a single, integrated financial/inventory data base scheduled for implementation at SPCC in 1990. This new system will preclude the file disconnects experienced with today's systems.

(4) Is the SPCC case indicative of systemic problems in inventory accounting and control?...What remains to be accomplished?

As Under Secretary Goodrich advised in his 15 July 1987 response to Senator Glenn, the Navy has a longstanding systemic problem with outdated accounting systems. Hardware for a comprehensive automated system is starting to come on line now, which together with modern software scheduled to be implemented in FY-90, will provide the required accountability and eliminate disparity between financial and inventory records.

In closing, substantial progress has been made toward better financial controls and material accountability. But, as described in the attached brief, final resolution of the issue of financial adjustments will only be achieved with Resystemization's implementation of an integrated financial/inventory data base. The CAV system has been a key interim step in improving the management of SPCC's commercial repair process...a major area of emphasis to ensure logistics support for the 600 ship Navy in the years ahead.

Sincerely,

J. B. WHITTAKER
Assistant Commander
Inventory and Systems Integrity

Enclosures

CONTROL AND ACCOUNTABILITY
OVER
COMMERCIALLY REPAIRED MATERIAL

Key points addressed in this brief are:

* The commercial repair process was based on the mailing of hard copy documents.

* The Fleet Modernization Program of the 80s caused a dramatic increase in commercial repair.

* The paper based system could not keep pace.

* Navy developed a new automated system in 1985.

* In moving to the new system, SPCC financial records were adjusted to reflect the official contractor material records...the first reconciliation in 15 years.

* The adjustment ...the result of misprocessed/incorrect/missing paperwork...amounted to $464 Million ...4% of the $11.9 Billion of repair transactions from 1972 to 1986.

* The new system (CAV 1) is but one step in a continuum of Navy initiatives to improve financial and material accountability.

* CAV does not provide a total fix to the financial/material record disconnects.

* The ultimate solution is still resystemization in 1990...providing an integrated financial/material data base.

CHART 1

Chart 1 addresses the issue of concern from Senator Glenn's 17 June 1987 letter to the Secretary of the Navy--a net $464 million FY 85 financial adjustment taken by Ships' Parts Control Center (SPCC) to reconcile financial records with official inventory records of Navy owned assets, maintained at commercial contractor plants.

CHART 2

Chart 2 shows the material and financial paperwork flow for the SPCC commercial repair process prior to FY 85. From a material standpoint, a ship would either turn in an item (carcass) requiring repair directly to a commercial repair facility or via a Navy Stock Point as specified in the Master Repairables Item List (MRIL). Receipt of the carcass at the Navy Stock Point and the subsequent shipment to the contractor was Transaction Item Reported (TIR) electronically to the Inventory Control Point (ICP). Commercial repair facilities had no TIR capability, so the information was mailed in monthly to the ICP. After an item was repaired, the commercial repair facility would ship it to a Navy warehouse for stowage.

In order to update the financial records (the Property Accounting Department (PAD) ledger), a copy of the shipping document was mailed by the ship to Navy Regional Finance Center, Washington DC (to SPCC after 1979) advising a not ready-for-issue carcass was turned into the supply system. A copy of the repair contract for the carcass was also forwarded by SPCC to update the PAD ledger. After completing repair, a shipment notice was mailed from the commercial contractor to let the ICP know that the repaired item had been forwarded to a Navy warehouse. Then, monthly the contractor mailed a status report summarizing all receipts, repairs and shipments.

CHART 3

Chart 3 profiles the dramatic growth of the SPCC commercial repair process versus organic repair since FY 1979. This shift to commercial repair reflects the impact of the Fleet Modernization Program. The increased sophistication of the new systems required a change to the maintenance philosophy for the highly complex shipboard systems...swap out of damaged components. The subsequent repair of the damaged component required the type technological specialty resident at commercial repair facilities. Commercial repair grew from 36% of the total value of SPCC carcasses repaired in FY 1979 to 67% in FY 1986. During the same timeframe the dollar value of carcasses repaired commercially grew from approximately $100M annually through the 1970's to over $800M by 1986. This explosive growth of the 80's necessitated a change in the way the Navy monitored and financially accounted for these repairables...we could no longer live with a paper based system.

CHART 4

Chart 4 represents the massive paperwork process required to make this system work. By 1985 over 400 commercial repair sites were located throughout the United States...supporting the growing 600 ship Navy operating in every ocean of the world ...with shore support facilities in nearly every major friendly country on the globe. We were literally being buried in an avalanche of paperwork!

CHART 5

Chart 5 points out the weaknesses of the pre-FY 85 system of commercial repair at SPCC. There was no mechanized interface between the repair sites and SPCC. The system relied on "paperwork by mail" as the main source document. Missing paperwork and duplicate paperwork were all too common. It was difficult to ensure that the paperwork was correct and that it was properly generated for such items as shipping discrepancies, condemned items, modified items, and superseded contracts. Compounding these problems, the mail based paperwork flow was simply not timely enough to provide a valid reconciliation tool between Navy financial files and contractor material quantities.

CHART 6

Commercial repair contracts are administered under Federal Acquisition Regulation. Commercial repair contractors must maintain the official property records of government material (carcasses) in accordance with sound industrial practices and procedures monitored by administrative contracting offices, usually Defense Contracting Administrative Support Offices (DCAS). SPCC monitored this process through receipt of the monthly status reports from the contractor. However, the SPCC financial records remained dependent on the paperwork flow generated worldwide by ships/activities. If the Navy was to move to an improved, more automated system, SPCC's financial files needed to reflect the official contractor material records. The resulting $464M financial adjustment represented the accumulation of 15 years of disconnects occurring under the mail based system. The missing/misprocessed paper transactions amounted to 4% of the $11.9B value of carcass transactions during the 1972-1986 period.

CHART 7

Chart 7 describes what needed to be done to improve SPCC's visibility and financial accounting for carcasses being repaired at commercial facilities. The major objectives were:

(1) Provide a mechanized interface between SPCC and contractors

(2) Develop an automated file at SPCC that would provide up to date status of the carcass through each step of the repair process

(3) Have the incoming transaction from the contractor update both the inventory and the financial files.

These objectives were incorporated under the Commercial Asset Visibility (CAV) Program implemented in FY 85. But CAV is only an interim step in a continuum of automated system initiatives the Navy has been developing to improve control of Navy material assets and financial accountability.

CHART 8

Chart 8 illustrates a number of these enhancements building towards Resystemization in 1990. Entering the '70's, the SPCC material side (represented by the Master Data File) and financial side processing were only loosely linked by a series of end of day, batch updates to the three key financial files (Due In/Due Out (DDF); Contract Status File (CSF); Obligations Status File (OSF)). Sequential updating of each file was required with special edits and different file structures generating rejects between each file's update. Recognizing the need for better financial/material accountability, the Navy committed substantial resources to improve existing systems through a series of interim enhancements shown on the time-line. Four of these directly affect SPCC file processing...(1) Centralized Accounting/Billing moved the maintenance of all financial records with the associated billing/financial accounting for material to the inventory control point (SPCC). This allowed Stock Points to concentrate on material receipt/issue/inventory functions...and provide central financial control at SPCC instead of separate financial files at each stock point. (2) Financial Procurement (FINPRO) brought the DDF/CSF/OSF financial files to the same level of data element detail and provided more upfront edits to lessen rejects between files; (3) Advance Traceability and Control (ATAC) established two hubs (San Diego and Norfolk) to funnel all carcasses through...the hubs screen for correct paperwork and material...and advise SPCC electronically of the initial receipt and subsequent shipment of the carcass to the repair site; (4) Files Diagnostic software compares data elements across all financial files to identify disconnects between files (e.g. CSF has contract completed...OSF still has open obligation).

CHART 8 (continued)

These initiatives coupled with CAV I & II are improving today's financial controls, but adjustments will continue to be required until the supply and financial files are integrated into a common data base in which a single transaction will update all required data elements...Resystemization will provide this capability in the 1990 timeframe.

CHART 9

Chart 9 summarizes the CAV program that was begun in FY 85 to improve efforts in the commercial repair area. The first critical step was an automated interface established in December 1984. The CAV I system covers 99 of the highest volume repair contractors (25% of total contractors), representing approximately 75% of the value of the repair inventory. In 1986, an additional automated interface was established by the Navy...Transhipment Hubs. All carcasses are processed through one of two sites (hubs) at Norfolk and San Diego. The carcass receipt and subsequent shipment to the commercial contractor is electronically transmitted to SPCC to update the material files. An improvement to this system, CAV II, is anticipated in early FY 88 that will provide document number control of assets at the contractor site, a tracking process through the entire repair process--including each change in status (induction, being repaired, repair completed), and an expanded coverage of contractors (99 to 116) and inventory base (75 to 85%).

CHART 10

Chart 10 demonstrates how the CAV process operates. The ship now sends all repairable carcasses through the Transhipment Hub. The carcass is examined to ensure it was correctly identified by the sending ship/activity and has correct shipping documentation. The hub then forwards the carcass to the commercial repair facility. After repair the carcass is returned to a Navy warehouse. For all phases of the hub and commercial repair process, each receipt, issue, and condition code change is made through electronic transmission to SPCC, updating the inventory and financial files. A check and balance is also provided for each step (Hub receipt/issues vs contractor receipt; SPCC financial and inventory files by material status of the carcass in the repair process vs contractor records; and contractor shipment vs Navy warehouse receipt).

CHART 11

Chart 11 summarizes the key points, emphasizing that prior to 1985 our commercial repair process had acknowledged weaknesses, but the CAV system and ultimately Resystemization continue a process of improvements to the commercial repair system. As a necessary step in this evolution, a financial adjustment was processed to have the antiquated, paper based financial records mirror the contractors' official inventory records prior to migration to the new world of CAV.

THE SECRETARY OF THE NAVY
WASHINGTON, D. C. 20350-1000

2 February 1988

The Honorable John Glenn
Chairman, Committee on Governmental Affairs
United States Senate
Washington, DC 20510-6250

Dear Mr. Chairman:

I am writing in response to the concerns expressed in your 9 November 1987 letter regarding the Navy Ships Parts Control Center's (SPCC) control over repairables at non-Navy activities, and the appropriateness of $464 million in related financial adjustments in 1985/86.

Your letter indicated that this situation requires immediate management attention. I share your concern on this matter. As you know, I recently issued strong guidance emphasizing the importance of personal accountability.

The issues you raise have received top management attention as part of a continuum of extensive Navy efforts to improve visibility and control over repairable assets. In that regard, the financial adjustments resulted from matching outdated SPCC financial files with current assets as an initial step to implement an improved system to manage commercial repairables. As discussed in detail in the attached responses to your six specific questions, I consider the financial adjustments to be appropriate. In hindsight, I certainly agree that we would be even more confident of our position had inventories been held at the contractor sites at the time of the adjustments. I must also emphasize that these adjustments reflected 15 years of unreconciled financial documentation for which there were simply insufficient audit trails for any meaningful item-by-item comparison of the outdated financial files with the official contractor records.

Navy has significantly improved its procedures for controlling these assets since 1985. Financial adjustments during the next phase will reflect lessons learned from the Commercial Asset Visibility (CAV I) implementation and reconciliation tools not previously available. Recent spot checks by the Naval Audit Service and the Defense Logistics Agency have confirmed the accuracy of current inventories at major commercial repair sites. A review still in process at SPCC already indicates that they can account for more than 98% of all units in the aggregate processed through commercial repair since CAV I was implemented in 1985. These results, together with the other factors in the response to question one of the attachment, support the Navy's contention that the adjustment was not the result of inventory loss. They also indicate that the Federal Acquisition Regulations (FAR) provide us with the appropriate

means to support accountability over our commercially repaired assets and to prevent physical inventory losses.

To be absolutely sure that we have this area well in hand, the Naval Audit Service will expand its ongoing auditing of SPCC's commercial repair program. Specifically, the validity of management actions and procedures associated with the $464 million CAV I write-off will be reviewed. Additional research will be conducted on related actions to determine if more extensive audits and inventories are warranted at the two major Navy inventory control points, SPCC and the Aviation Supply Office (ASO), particularly relative to the new CAV II system being implemented this fiscal year. I will ensure that the Navy pursues appropriate follow-on actions identified during such audits.

In closing, I share your concern that the Navy must ensure that the repair process is adequately tracked and that the proper controls are in place to prevent any misappropriation of assets. We have been improving this process for the past several years, and will continue to do so in the future. You have my personal assurance that the accountability of this process will be thoroughly reviewed. I will advise you of the outcome of these efforts. In the interim, I have designated Rear Admiral James B. Whittaker, Assistant Commander for Inventory and Systems Integrity of the Naval Supply Systems Command, as the Navy focal point for this matter.

Sincerely,

James H. Webb, Jr.

Attachment

RESPONSES TO SPECIFIC QUESTIONS
IN SENATOR GLENN'S 9 NOVEMBER 1987 LETTER

QUESTION ONE:
Does my staff's position that contractors maintain the official inventory records and that the $464M adjustment does not represent a physical loss represent the Navy's position on this issue? If so, please explain how we can be confident regarding this claim when no attempt was made to research the contractor reported data.

Yes, my staff's position is the Navy's position. Our perspective on the contractor issue is that the preference in the Federal Acquisition Regulations (FAR) for contractor maintenance of Government Furnished Property (GFP) records is appropriate, given the detailed requirements for government oversight spelled out in the FAR. These regulations provide for Government oversight in all areas of GFP accounting/reporting, including the responsibilities of the Government Property Administrator to review/approve contractor accounting systems. The FAR was completely reviewed and reissued in April 1984, with subsequent updates to address specific issues. The most recent GFP change was in November 1986, at DOD's request, to impose even stricter contractor GFP accounting standards. The Navy's financial adjustments were related to the execution of existing oversight responsibilities, not to the adequacy of the controls themselves.

With regard to the possibility of physical losses, it was the Navy's judgment in 1985 that material losses were not at issue. This was based on management's awareness of the historic inadequacy of the manually processed and paper-intensive financial ledgers for these items, and consequent heavy emphasis on intensive item manager liaison with contractors to trace physical assets. It was clear that the financial ledger was out of balance with the actual physical quantities. We acknowledge in hindsight that this position would be even more defensible had we conducted inventories at that time, but CAV I was implemented to improve our overall management of commercially repairable items, and it did. However, CAV I's implementation was essentially completed prior to the Navy's significant efforts to reinforce the proper balance of readiness and accountability, with emphasis on detailed reconciliations...which in this 1985 case did not occur. As indicated in the cover letter, the Naval Audit Service will expand its ongoing auditing of SPCC's commercial repair program and specifically review the validity of management actions and procedures associated with the $464 million CAV I write-off. Nonetheless, the following factors continue to support the initial judgment that the issue was financial record disconnects, not material losses:

a. Naval Audit Service (NAVAUDSVC) Audit: Preliminary results from an ongoing NAVAUDSVC audit of 46 commercial contractors' control of repairables indicates accountability for material is tight and contractor records accurately reflect carcasses in their custody;

b. Defense Contract Administration Service (DCAS)/SPCC Contractor Review: The Defense Logistics Agency (DLA) coordinated a September 1987 spot audit of six of the largest commercial contractors that showed highly accurate inventory record versus on-hand quantities (199 of 200 randomly selected items);

c. SPCC Transaction Analysis: An October 1987 detailed review of the Commercial Asset Visibility (CAV) History File material transactions versus SPCC files since the fiscal year 1985 implementation of CAV I shows an extremely close correlation of total physical receipts to subsequent physical issues and in-process assets of over 98%.

d. Besides the positive indications from the recent assessments noted above, several other factors in recent years help demonstrate that physical losses were not an issue. The $464 million financial adjustment was over three times larger than the average inventory of these items through the late 1970s, and exceeded that inventory as late as 1984...clearly had the financial adjustment represented significant physical losses, new replenishments would have been needed. However, from 1981-1987, growth in inventory and related budgets for new procurements paralleled the growth in the Fleet Modernization Program...no new levels of replenishment buys emerged reflecting carcass losses. Simultaneously, during the five-year period prior to the adjustment (1981-1985), SPCC's System Material Availability (SMA) rate on repairables improved 15%, and in 1986-1987 improved a further 9%...an accomplishment not possible with carcass losses. In turn, our Repair Turn Around Time (RTAT) improved by 25%, an unsupportable achievement without a high level of repair carcass availability.

QUESTION TWO:
Is Navy going to repeat the process used in 1985 and 1986 to ask contractors what Navy inventory they have?

No. Although Navy will obtain contractor reports of current inventory assets in converting to the second phase of the Commercial Asset Visibility program (CAV II), SPCC has additional audit tools, such as the CAV History File, that were not available during the 1985/86 transition to CAV I. In addition, SPCC is converting related files currently on microfiche to enable automated analysis of past transactions. Working with the DCAS and the contractors, SPCC will be applying lessons learned from CAV I to minimize file differences and resultant financial adjustments, and to conduct sample inventories. Contractors will also participate in the conversion by attaching a material movement document number on each repairable in their custody to initiate CAV II's tracking of all carcasses through the entire repair cycle. As discussed in the basic letter, the Naval Audit Service will review the $464 million CAV I write-off actions/procedures. It will also research the need to conduct more extensive audits at Navy inventory control points, particularly relative to the new CAV II system being implemented this fiscal year. Given this extensive review process, financial

adjustment estimates are speculative at this time, but are certainly less than the $208M cited in the draft GAO audit.

QUESTION THREE:
List material on hand at contractor sites versus dollar amounts in SPCC files at the time of the $464M adjustment.

Enclosed is the listing in the format requested. The context of this listing is vital. As noted in the cover letter, the financial files had not been successfully reconciled for at least 15 years and SPCC's financial ledger was known to have significant differences due to the antiquated, paper-based system then in use. These differences amounted to 4% of the estimated total throughput for that period. Recent spot-checks have verified the accuracy of the contractors' inventories. The Naval Audit Service will utilize this list and the list provided in response to Question Four in focusing its review of the $464 million adjustment.

QUESTION FOUR:
List those contractors selling identical parts to those being repaired at the time of the write-off.

Enclosed is a listing of these contractors. As one would anticipate, the contractor who makes the component is often best prepared to repair that component...essentially having facilitized the equipment and developed the skills to fix the broken component while gearing up for new production. However, new buys of repairable items are based on new weapons systems entering the Fleet, increased demand for existing items, and those Beyond Economical Repair (BER) requirements generated during the repair process. The item manager must approve all BER/loss determinations made by the DCAS representative on-site. A rise in BER/loss ratios would be cause for an item manager review prior to approval of new procurements. In any case, the $464M financial adjustment was the result of misprocessed/erroneous paper transactions entering SPCC's financial files...not asset losses.

QUESTION FIVE:
Should the Federal Acquisition Regulations (FAR) be changed to require the government to maintain the official accounting records?

The FAR does not need to be changed. As discussed in response to Question One, the FAR was completely reviewed in April 1984, with a subsequent update in 1986, imposing stricter contractor GFP accounting standards. In that regard, we believe that the financial adjustment problems have been related to execution of our oversight responsibilities, and do not stem from any FAR inadequacies. Moreover, the FAR allows government the option of maintaining the official contractor records "...if in the government's interest." As ADP and telecommunications capabilities improve in the future, perhaps a direct link into the contractors' accounting systems may be feasible and may provide the government the capability to assume the accounting function... given sufficient additional

Navy/DOD personnel on-site to monitor the material process now performed by the contractors' personnel. However, with the increased control provided by CAV II and the forthcoming Resystemization, we do not believe such a change is necessary or in the Navy's best interest.

QUESTION SIX:
The corrections necessary for the Navy to better control its inventories will be in place by 1990. Can we afford to wait that long?

No. We are not waiting until 1990. The Navy has been actively committed to improving the commercial repair process since the early 1980s. The transition to CAV I in December 1984 was a major interim step in automating the paper-based system of the 1970s and required the $464 million financial adjustment to update the financial ledgers. CAV II is the next step in enhancing the commercial repair process, providing document number tracking through the entire repair cycle, receiving the contractors' transactions directly into SPCC's mainframe processing programs to feed both the material and financial files, posting all conditions of assets on the SPCC material file, and implementing the capability for automated reconciliations of SPCC's material and financial files. The final step will be in 1990 when our ADP Resystemization will provide an integrated financial/material data base that will preclude the disconnects now occurring with separate financial and material files. Resystemization is one of the Navy's largest ADP projects ever undertaken, replacing all ADP hardware and software at the Navy's principal inventory control points (SPCC and ASO) to support their logistics needs into the 21st century, and has already been accelerated to the maximum extent possible.

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VALUE OF NAVAL MATERIAL IN CONTRACTOR PLANTS
AND RELATED FINANCIAL ADJUSTMENTS AT CAV I IMPLEMENTATION

CONTRACTOR	FSCM	NAVY_VALUE	CONT_VALUE	ADJUSTMENT
SPERRY GYRO GN	056232	59745796.10	11433187.50	-48312608.60
RAYTHEON CO FV	05D832	57263905.55	16195193.00	-41068712.55
RAYTHEON CO GD	006129	7897393.09	43698819.00	35801425.91
TREADWELL CORP	081412	37415981.00	9696756.00	-27719225.00
IBM CORP MA	052088	30720012.27	5445960.00	-25274052.27
JONATHON CO	055733	9475297.13	32623680.50	23148383.37
VARIAN ASSOC PA	099313	29706454.89	10572240.00	-19134214.89
SPERRY CORP CH	003956	17069866.89	352011.00	-16717855.89
OCEAN TECHNOLOGY	023094	17659416.30	1926060.00	-15733356.30
ROCKWELL CORP RI	095105	15869431.79	1523310.00	-14346121.79
OMNI-WAVE ELEC GL	008040	13912162.51	256360.00	-13655802.51
PERKIN ELMER CO	026581	12709872.95	1587839.00	-11122033.95
IT&T GILFILLAN	024930	20488318.71	9499313.00	-10989005.71
GTE PRODUCTS	007397	8739188.21	18772420.00	10033231.79
EDO CORP	082340	15665551.61	5721440.00	-9944111.61
ROCKWELL CORP CR	013499	20038497.86	10201380.00	-9837117.86
RCA BU	007076	11301640.46	1598230.00	-9703410.46
HUGHES AIRCRAFT TO	073293	9518817.46	2244.00	-9516573.46
LOCKHEED ELECTRIC	087557	8508032.50	896295.50	-7611737.00
G.E.FITCHBURG	003502	7769150.88	544400.00	-7224750.88
ALCO POWER	050024	12648934.92	5965330.00	-6683604.92
DEWEY ELEC CORP	014508	6979267.31	435204.00	-6544063.31
RAYTHEON CO PD	094404	11732106.34	5495560.00	-6236546.34
CHAS. STARK DRAPER	051993	9339191.90	3207830.00	-6131361.90
BELL AREOSPACE	080070	6595937.39	1732120.00	-4863817.39
SARGEANT IND	078062	5700123.99	1305550.00	-4394573.99
KOLLMORGAN	034228	6803877.13	2568734.00	-4235143.13
GOULD CORP FL	020886	4298280.00	216510.00	-4081770.00
WESTINGHOUSE SV	090099	13526837.00	9658891.00	-3867946.00
MAGNAVOX	037695	4686621.82	987200.00	-3699421.82
E-SYSTEMS INC	000724	11421372.47	7786249.00	-3635123.47
U.S. DYNAMICS	026269	3963123.00	703530.00	-3259593.00
SPERRY CORP SP	090536	7090884.76	3950336.00	-3140548.76
FMC CORP	044114	11175622.52	8508952.00	-2666670.52
WORTHINGTON GROUP	093232	2565208.82	28680.00	-2536528.82
INGERSOLL RAND	088663	3555006.61	1035020.00	-2519986.61
NORTH ATLANTIC	007342	2754747.04	434768.00	-2319979.04
WEST BR DIESEL PD	03D921	3731252.12	1600040.00	-2131212.12
DIGITAL DEVELOP	011160	2933816.80	816260.00	-2117556.80
AT&T CORP	092663	2895967.00	841158.00	-2054809.00
DIAGNOSTIC RET	019378	3079943.24	1073774.50	-2006168.74
SINGER LIBRASCOPE	036090	6238309.01	4262300.47	-1976008.54
SPERRY CORP CW	09T580	4057191.00	2200869.00	-1856322.00
LITTON G&C	006481	2945258.27	1093551.00	-1851707.27
LITTON AMECON	092755	3924069.18	2077071.00	-1846998.18
SCIENTIFIC ATLANTA	020227	3189293.00	1392757.00	-1796536.00
HUGHES AIRCRAFT FU	005869	6772303.29	5070470.80	-1701832.49
TRIO LABS	000638	-468735.00	1230459.00	1699194.00
CONTROL DATA CORP	027963	2798000.00	1159300.00	-1638700.00
AAI CORP	097334	5757258.28	4152540.00	-1604718.28
ALFA-LAVAL	06K044	1451500.00	2995660.00	1544160.00

VALUE OF NAVAL MATERIAL IN CONTRACTOR PLANTS
AND RELATED FINANCIAL ADJUSTMENTS AT CAV I IMPLEMENTATION

CONTRACTOR	FSCM	NAVY_VALUE	CONT_VALUE	ADJUSTMENT
SANDERS ASSOC	012217	1959809.94	3490663.00	1530853.06
PROBE	050715	2054424.27	705790.00	-1348634.27
AMETEK STRAZA	003024	2369558.86	1050398.00	-1319160.86
TECH MATERIAL CORP	082679	1541600.00	227080.00	-1314520.00
IBM CORP OW	003640	2218417.81	926410.00	-1292007.81
BENDIX CORP	077068	3142780.07	1868364.00	-1274416.07
CONSOLDTD CONTROLS	009790	1383140.00	253810.00	-1129330.00
PROSSER AN	012439	1943848.51	876010.00	-1067838.51
GENERAL DYNAMICS P	099584	12937437.77	11930907.00	-1006530.77
ROCKWELL CORP AN	094756	1539420.00	611650.00	-927770.00
ARGO SYSTEMS	033472	2678529.77	1771734.00	-906795.77
AIRSEARCH	070210	2268203.96	1377660.00	-890543.96
ALUF INDUSTRIES	027423	1207810.00	347040.00	-860770.00
TRANSAM DeLAVEL TR	016712	1168940.00	397610.00	-771330.00
G.E.SYRACUSE	003538	4084774.10	4848448.00	763673.90
CLIFTON PRECISION	01K426	1013016.80	321056.00	-691960.80
LEXAIR	056607	1174644.10	490860.00	-683784.10
NORDEN SYSTEMS	021877	1188474.95	1804663.00	616188.05
FAIRCHILD WESTON	072314	188722.53	774460.00	585737.47
WESTINGHOUSE HV	097942	-292452.07	285996.00	578448.07
PEABODY BARNES	005748	470330.00	998920.00	528590.00
McDONNELL DOUGLAS	07e301	629384.00	109340.00	-520044.00
FISHER ENGINEERING	091196	1534358.00	2038630.00	504272.00
TRW INC.	011982	740940.00	277570.00	-463370.00
CUBIC CORP	094987	414815.00	.00	-414815.00
DATAMETRICS CORP	019059	1113000.00	711536.00	-401464.00
COBER ELECTRONICS	028909	401793.83	1480.00	-400313.83
WESTINGHOUSE AN	031442	647917.47	264280.00	-383637.47
MINE SAFTEY	055799	572263.02	222720.00	-349543.02
HUGHES AIRCRAFT IR	053670	770244.66	426420.00	-343824.66
S.T. RESEARCH CORP	050406	428963.00	88946.00	-340017.00
CARVER PUMP	010941	599722.19	267570.00	-332152.19
PROSSER HO	081854	404484.16	94320.00	-310164.16
PARKER HANNIFAN	092003	1244624.51	989730.00	-254894.51
OKLAHOMA AEROTRONI	022887	475287.38	228520.00	-246767.38
STEWART WARNER	098738	38270.00	264396.00	226126.00
AMEX SYSTEMS	056184	405982.00	602402.00	196420.00
RAYTHEON CO WAL	06H339	1007900.00	812510.00	-195390.00
UNIDYNAMICS	095310	202884.74	19077.00	-183807.74
PENNWALT CORP	054370	2655934.37	2820940.00	165005.63
PREFORMED MARINE	004025	37800.00	164400.00	126600.00
SIPPICAN CORP	016848	63051.00	183767.00	120716.00
FREQUENCY ENG	016786	642976.07	751006.00	108029.93
APPLIED PHYSICS LA	012104	89390.00	173150.00	83760.00
DIGITAL EQUIP CO	06P840	156836.75	89852.00	-66984.75
OGALLALA ELECTRONI	015766	95721.53	33000.00	-62721.53
EASTERN MICROWAVE	030616	179370.00	118450.00	-60920.00
HARRIS CORP ME	077327	11070.00	66240.00	55170.00
RIX INDUSTRIES	028953	43435.54	91330.00	47894.46
HONEYWELL INC	008783	196062.82	168140.00	-27922.82
RAYTHEON CO WAY	099687	2487430.00	2490937.00	3507.00

VALUE OF NAVAL MATERIAL IN CONTRACTOR PLANTS
AND RELATED FINANCIAL ADJUSTMENTS AT CAV I IMPLEMENTATION

CONTRACTOR	FSCM	NAVY_VALUE	CONT_VALUE	ADJUSTMENT
AYDIN MONITOR	020747	14688.00	16382.00	1694.00
NORTHROP	026916	.00	.00	.00
HARRIS CORP WE	091417	.00	.00	.00
TOTAL		650,165,388.78	316,480,383.27	-333,685,005.51

NAVY PURCHASES OF IDENTICAL NEW PARTS FROM CONTRACTORS REPAIRING THOSE PARTS
FY85-FY86

CONTRACTOR	FSCM	PROC QTY FY85	PROC VAL FY85 1000S	PROC QTY FY86	PROC VAL FY86 1000S	TOTAL PROC QTY	TOTAL PROC VAL 1000S
GENERAL DYNAMICS PO	99584	25,231	77,141.09	11,085	36,203.86	36,316	113,344.95
HUGHES AIRCRAFT IR	53670	3,560	28,535.63	58	350.81	3,618	28,886.44
RAYTHEON CO GD	06129	1,762	11,969.41	698	3,701.35	2,460	15,670.76
VARIAN ASSOC PA	99313	576	10,093.32	716	4,167.06	1,292	14,260.38
SPERRY CORP SP	90536	1,959	8,019.05	1,130	4,233.11	3,089	12,252.17
GTE PRODUCTS	07397	888	7,664.99	404	2,996.45	1,292	10,661.44
SINGER LIBRASCOPE	36090	1,673	5,761.96	1,046	2,655.78	2,719	8,417.74
TREADWELL CORP	81412	2,051	2,656.54	1,985	5,450.09	4,036	8,106.64
IT&T GILFILLAN	24930	993	6,540.05	417	1,275.99	1,410	7,816.05
OCEAN TECHNOLOGY	23094	1,352	2,538.10	2,565	4,765.56	3,917	7,303.67
FMC CORP	44114	648	2,710.91	626	3,527.49	1,274	6,238.40
EDO CORP	82340	619	3,045.14	362	2,478.75	981	5,523.89
E-SYSTEMS INC	00724	544	1,531.00	1,847	3,570.21	2,391	5,101.21
INGERSOLL RAND	88663	114	3,809.40	11	254.00	125	4,063.40
McDONNELL DOUGLAS	76301	423	1,342.64	348	2,622.42	771	3,965.06
NORTH ATLANTIC	07342	2,921	2,104.59	2,301	1,689.99	5,222	3,794.59
LITTON G&C	06481	865	2,213.64	482	1,513.99	1,347	3,727.64
WESTINGHOUSE SV	90099	109	2,410.84	48	1,030.96	157	3,441.80
SIPPICAN CORP	16848	1,037	1,687.26	1,086	1,638.79	2,123	3,326.05
RAYTHEON CO PD	94404	1,173	2,277.48	408	910.68	1,581	3,188.16
SPERRY CORP CH	03956	601	2,011.38	664	975.14	1,265	2,986.52
DIAGNOSTIC RET	19378	1,948	1,598.12	980	1,330.02	2,928	2,928.14
OMNI-WAVE ELEC GL	08040	279	2,712.30	38	181.15	317	2,893.45
WORTHINGTON GROUP	93232	51	602.38	236	2,191.06	287	2,793.44
PROBE	50715	6	810.00	19	1,969.42	25	2,779.42
SCIENTIFIC ATLANTA	20227	4,386	1,970.94	1,454	538.35	5,840	2,509.30
AMETEK STRAZA	03024	870	1,508.70	835	957.98	1,705	2,466.68
S.T. RESEARCH CORP	50406	379	1,517.16	407	865.49	786	2,382.64
SANDERS	12217	112	829.49	233	1,472.19	345	2,301.68
G.E.SYRACUSE	03538	624	1,326.57	683	868.09	1,307	2,194.67
BELL AREOSPACE	80070	360	1,216.72	90	738.55	450	1,955.27
ROCKWELL	95105	15	286.43	173	1,551.90	188	1,838.33
ARGO SYSTEMS	33472	130	1,073.37	78	734.11	208	1,807.48
CONTROL DATA CORP	27963	74	617.31	317	1,072.19	391	1,689.50
ROCKWELL CORP AN	94756	54	540.75	142	1,131.25	196	1,672.00
LITTON AMECON	92755	274	1,358.59	261	308.97	535	1,667.56
PARKER HANNIFAN	92003	204	1,643.37	0	.00	204	1,643.37
KOLLMORGAN	34228	155	1,283.25	47	319.99	202	1,603.24
PERKIN ELMER CO	26581	98	1,510.17	1	33.40	99	1,543.57
ALCO POWER	50024	9	1,216.32	5	169.35	14	1,386.17
BENDIX CORP	77068	189	1,155.67	42	127.36	231	1,283.02
PROSSER AN	12439	416	1,233.45	0	.00	416	1,233.45
RCA BU	07076	4	1,189.00	0	.00	4	1,189.00

CAV NIINS - REPAIRED FY85 OR FY86
CSF RECORDS - PROCUREMENTS POSTED IN FY85 OR FY86
DATE PREPARED 12/11/87

NAVY PURCHASES OF IDENTICAL NEW PARTS FROM CONTRACTORS REPAIRING THOSE PARTS
FY85-FY86

CONTRACTOR	FSCM	PROC QTY FY85	PROC VAL FY85 1000S	PROC QTY FY86	PROC VAL FY86 1000S	TOTAL PROC QTY	TOTAL PROC VAL 1000S
FAIRCHILD WESTON	72314	12	1,001.29	0	.00	12	1,001.29
AMEX SYSTEMS	56184	261	794.14	67	109.58	328	903.72
TRIO LABS	00638	844	861.75	5	5.00	849	866.75
MINE SAFTEY	55799	0	.00	1,273	822.82	1,273	822.82
GOULD CORP FL	20886	27	159.39	128	648.33	155	807.71
HUGHES AIRCRAFT TO	73293	11	783.75	0	.00	11	783.75
TRANSAM DeLAVEL TR	16712	10	90.64	10	606.21	20	696.85
PENNWALT CORP	54370	73	631.00	0	.00	73	631.00
CARVER PUMP	10941	39	571.13	1	13.98	40	585.11
ROCKWELL CORP CR	13499	247	458.36	122	120.86	369	579.22
MAGNAVOX	37695	112	468.09	25	82.90	137	550.99
STEWART WARNER	98738	935	407.77	344	125.31	1,279	533.08
OKLAHOMA AEROTRONIC	22887	135	286.02	78	186.66	213	472.68
IBM CORP OW	03640	20	164.87	33	212.07	53	376.94
AYDIN MONITOR	20747	91	319.79	101	33.50	192	353.29
FISHER ENGINEERING	91196	14	252.17	0	.00	14	252.17
HONEYWELL INC	08783	67	148.73	17	76.15	84	224.89
DIGITAL DEVELOP	11160	81	216.92	0	.00	81	216.92
UNIDYNAMICS	95310	448	194.25	13	15.22	461	209.47
WESTINGHOUSE AN	31442	9	69.07	4	109.83	13	178.90
SARGEANT IND	78062	9	81.62	11	96.16	20	177.78
DIGITAL EQUIP CO	6P840	92	108.30	9	19.63	101	127.94
DATAMETRICS CORP	19059	28	41.03	16	77.80	44	118.83
U.S. DYNAMICS	26269	89	100.31	0	.00	89	100.31
EASTERN MICROWAVE	30616	0	.00	2	68.11	2	68.11
ALFA-LAVAL	6K044	0	.00	4	50.43	4	50.43
RIX INDUSTRIES	28953	1	50.15	0	.00	1	50.15
AAI CORP	97384	0	.00	12	39.37	12	39.37
G.E.FITCHBURG	03502	3	7.31	9	21.94	12	29.26
WESTINGHOUSE HV	97942	0	.00	10	19.50	10	19.50
CUBIC CORP	94987	3	5.87	5	9.95	8	15.82
AT&T CORP	92663	1	12.60	0	.00	1	12.60
TECH MATERIAL CORP	82579	3	10.61	0	.00	3	10.61
RAYTHEON CO FV	5D832	0	.00	3	9.79	3	9.79
AIRSEARCH	70210	0	.00	0	.00	0	.00
ALUF INDUSTRIES	27423	0	.00	0	.00	0	.00
APPLIED PHYSICS LAB	12104	0	.00	0	.00	0	.00
CHAS. STARK DRAPER	51993	0	.00	0	.00	0	.00
CLIFTON PRECISION	1K426	0	.00	0	.00	0	.00
COBER ELECTRONICS	28909	0	.00	0	.00	0	.00
CONSOLDTD CONTROLS	09790	0	.00	0	.00	0	.00
DEWEY ELEC CORP	14508	0	.00	0	.00	0	.00
FREQUENCY ENG	16786	0	.00	0	.00	0	.00

CAV NIINS - REPAIRED FY85 OR FY86
CSF RECORDS - PROCUREMENTS POSTED IN FY85 OR FY86
DATE PREPARED 12/11/87

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NAVY PURCHASES OF IDENTICAL NEW PARTS FROM CONTRACTORS REPAIRING THOSE PARTS
FY85-FY86

CONTRACTOR	FSCM	PROC QTY FY85	PROC VAL FY85 1000S	PROC QTY FY86	PROC VAL FY86 1000S	TOTAL PROC QTY	TOTAL PROC VAL 1000S
HARRIS CORP ME	77327	0	.00	0	.00	0	.00
HARRIS CORP WE	91417	0	.00	0	.00	0	.00
HUGHES AIRCRAFT FU	05869	0	.00	0	.00	0	.00
IBM CORP MA	52088	0	.00	0	.00	0	.00
JONATHON CO	55733	0	.00	0	.00	0	.00
LEXAIR	56607	0	.00	0	.00	0	.00
LOCKHEED ELECTRIC	87557	0	.00	0	.00	0	.00
NORDEN SYSTEMS	21877	0	.00	0	.00	0	.00
NORTHROP	26916	0	.00	0	.00	0	.00
OGALLALA ELECTRONIC	15766	0	.00	0	.00	0	.00
PEABODY BARNES	05748	0	.00	0	.00	0	.00
PREFORMED MARINE	04025	0	.00	0	.00	0	.00
PROSSER HO	81854	0	.00	0	.00	0	.00
RAYTHEON CO WAL	6H339	0	.00	0	.00	0	.00
RAYTHEON CO WAY	99687	0	.00	0	.00	0	.00
SPERRY CORP CW	9T580	0	.00	0	.00	0	.00
SPERRY GYRO GN	56232	0	.00	0	.00	0	.00
TRW INC.	11982	0	.00	0	.00	0	.00
WEST BR DIESEL PO	30921	0	.00	0	.00	0	.00
TOTAL		63,401	221,561.41	36,630	106,154.90	100,031	327,716.39

CAV NIINS - REPAIRED FY85 OR FY86
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DATE PREPARED 12/11/87